ORDER NO. AD8807203C2

# Service Manual

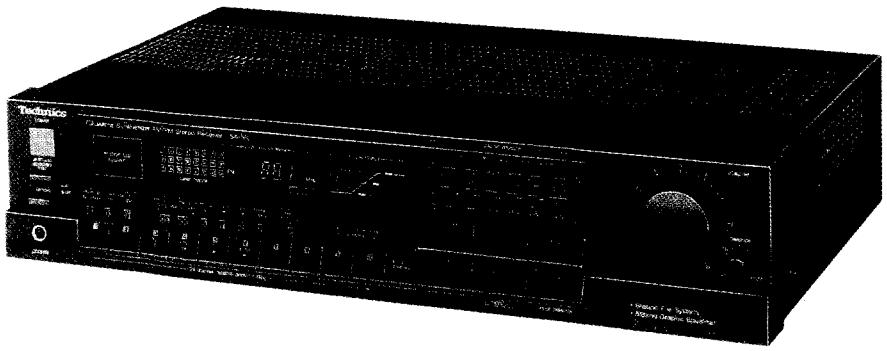
Receiver

QUARTZ Synthesizer
AM/FM Stereo Receiver

# SA-160

**Color**

(K)...Black Type



**Area**

| Color | Area |
|---|---|
| (K) | (EX).....Continental Europe. |
| (K) | (EH).....Holland. |
| (K) | (XL).....Australia. |
| (K) | (EG).....F.R. Germany. |

## SPECIFICATIONS

**(DIN 45 500)**

### ■ AMPLIFIER SECTION

| | |
|---|---|
| **DIN power output 1kHz continuous power output both channels driven** | 2×40W (8Ω) |
| **Total harmonic distortion half power at 1kHz** | 0.07% (8Ω) |
| **Intermodulation distortion rated power at 60Hz: 7kHz=4: 1, SMPTE, 8Ω** | 0.5% |
| **Power bandwidth both channels driven, −3dB** | 10Hz~40kHz (8Ω) |
| **Damping factor** | 20 (8Ω) |
| **Input sensitivity and impedance** | |
| **PHONO** | 3mV/47kΩ |
| **CD, VCR 1, TAPE/VCR 2** | 200mV/22kΩ |
| **PHONO maximum input voltage (1kHz, RMS)** | 150mV |
| **S/N** | |
| **rated power (8Ω)** | |
| **PHONO** | 68dB (IHF, A: 71dB) |
| **CD, VCR 1, TAPE/VCR 2** | 70dB (IHF, A: 85dB) |
| **Frequency response** | |
| **PHONO** | RIAA standard curve ±0.8dB (30Hz~15kHz) |
| **CD, VCR 1, TAPE/VCR 2** | 10Hz~70kHz (±3dB) |
| **5 band graphic equalizer** | 80Hz, −10dB~+10dB |
| | 250Hz, −10dB~+10dB |
| | 1kHz, −10dB~+10dB |
| | 4kHz, −10dB~+10dB |
| | 12.5kHz, −10dB~+10dB |
| **Loudness control (volume at −30dB)** | 50Hz, +9dB |
| **Output voltage** | |
| **VCR 1, TAPE/VCR 2 REC OUT** | 200mV |
| **Channel balance, 250Hz~6,300Hz** | ±1dB |
| **Channel separation** | 55dB |
| **Headphones output level and impedance** | 380mV/330Ω |
| **Load impedance** | |
| **MAIN or REMOTE** | 4Ω~16Ω |
| **MAIN and REMOTE** | 8Ω~16Ω |

### ■ FM TUNER SECTION

| | |
|---|---|
| **Frequency range** | 87.50~108.00MHz |
| **Sensitivity** | |
| **S/N 30dB** | 1.5μV (75Ω) |
| **S/N 26dB** | 1.3μV (75Ω) |
| **S/N 20dB** | 1.2μV (75Ω) |
| **IHF usable sensitivity** | 1.5μV (IHF '58, 75Ω) |
| **IHF 46dB stereo quieting sensitivity** | 22μV/75Ω |
| **Total harmonic distortion** | |
| **MONO** | 0.2% |
| **STEREO** | 0.3% |
| **S/N** | |
| **MONO** | 60dB (75dB, IHF) |
| **STEREO** | 58dB (71dB, IHF) |
| **Frequency response** | 20Hz~15kHz, +1dB~−2dB |
| **Alternate channel selectivity** | ±400kHz, 65dB |
| **Capture ratio** | 1.0dB |
| **Image rejection at 98MHz** | 40dB |
| **IF rejection at 98MHz** | 70dB |
| **Spurious response rejection at 98MHz** | 70dB |
| **AM suppression** | 50dB |
| **Stereo separation** | |
| **1kHz** | 40dB |
| **10kHz** | 30dB |
| **Carrier leak** | |
| **19kHz** | −30dB (−35dB, IHF) |
| **38kHz** | −45dB (−50dB, IHF) |
| **Channel balance (250Hz~6,300Hz)** | ±1.5dB |
| **Limiting point** | 1.2μV |
| **Bandwidth** | |
| **IF amplifier** | 180kHz |
| **FM demodulator** | 1000kHz |
| **Antenna terminals** | 75Ω (unbalanced) |

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

## ■ AM TUNER SECTION

| | |
|---|---|
| **Frequency range** | 522~1611kHz (9kHz-steps)<br>530~1620kHz (10kHz-steps) |
| **Sensitivity (S/N 20dB)** | 20μV, 330μV/m |
| **Selectivity at 999kHz** | 55dB |
| **Image rejection at 999kHz** | 40dB |
| **IF rejection at 999kHz** | 55dB |

## ■ GENERAL

| | |
|---|---|
| **Power consumption** | 250W |
| **Power supply** | |
| **For Australia** | AC 50Hz/60Hz, 240V |
| **For continental Europe** | AC 50Hz/60Hz, 220V |
| **Dimensions (W × H × D)** | 430 × 97 × 288mm<br>(16-15/16" × 3-13/16" × 11-3/16") |
| **Weight** | 5.1kg (11.2 lb.) |

**Notes:**

1. Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).
2. Specifications are subject to change without notice. Weight and dimensions are approximate.

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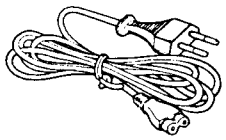
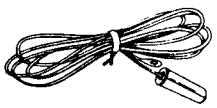
# ■ ACCESSORIES

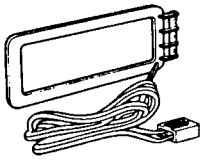
• AC power supply cord (1)
(SFDAC05E03 [EX, EH])
(SJA173 [XL])



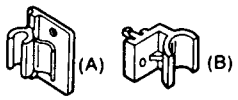
• FM indoor antenna (1)
(SSA269M [XL])
(SSA270M [EX, EH, EG])



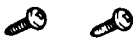
• AM loop antenna (1)
(SPB1161)



• AM antenna holders (2)
(SMA233-1M) (SMA231M)




• Screws (2)



(XTN3+10AFZ)

**Note:** Configuration of AC power supply cord and FM indoor antenna differs according to area.



D

# ■ CONNECTIONS TO EQUIPMENT

## "PHONO" terminals

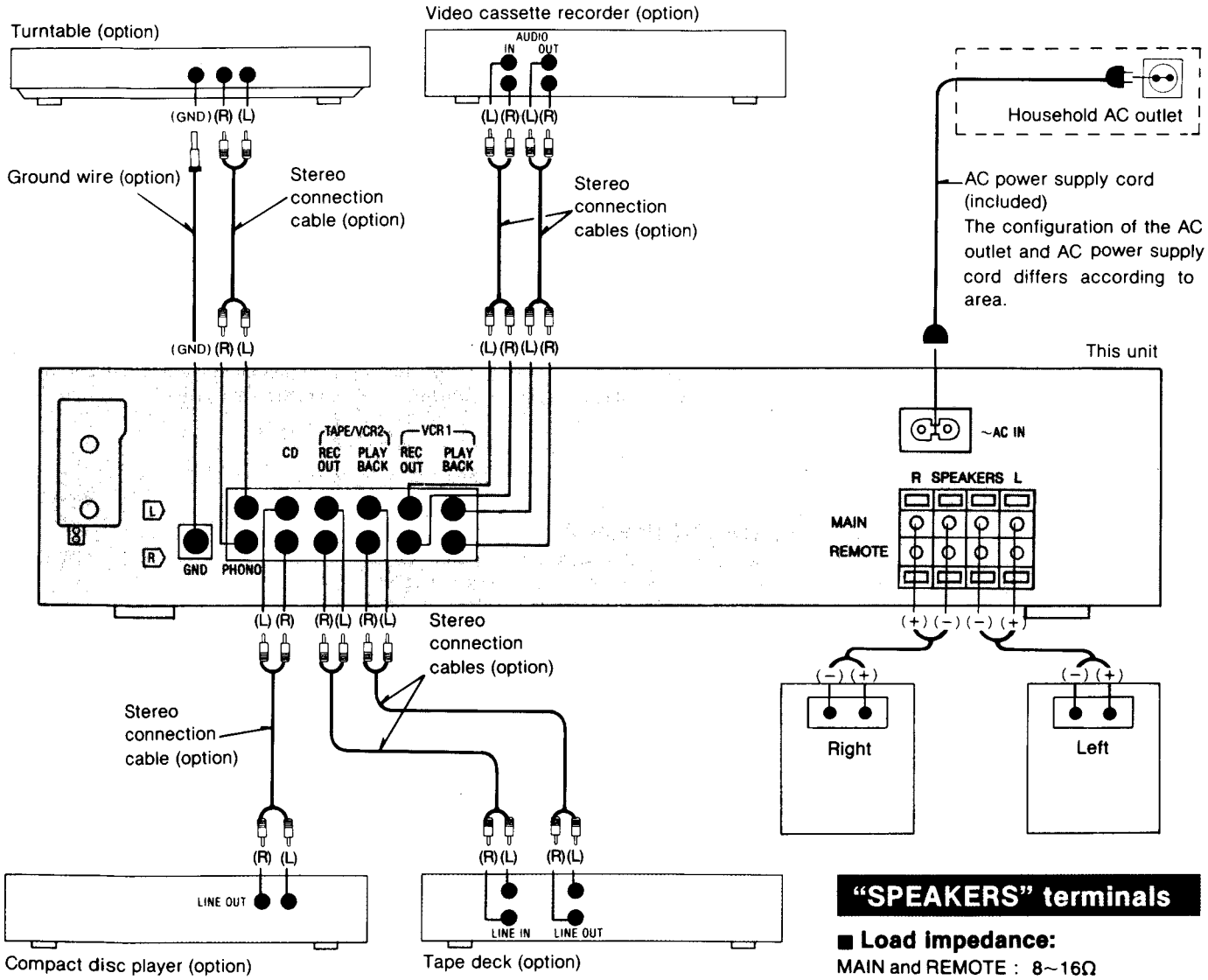
Connect a turntable.

**Note:**

For remote-control operation, be sure to connect the ground wire correctly.

## "VCR 1" terminals

Connect a video cassette recorder or an audio tape deck etc. (Refer to the operating instructions of VCR, etc.)




Compact disc player (option)

Tape deck (option)

## "CD" terminals

Connect a compact disc player.

## "TAPE/VCR 2" terminals

Connect a tape deck or second VCR.

## "SPEAKERS" terminals

### ■ Load impedance:

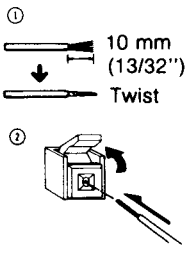
MAIN and REMOTE : 8~16Ω
MAIN or REMOTE : 4~16Ω

### ■ "REMOTE" terminals

For connection to a second pair of speakers.

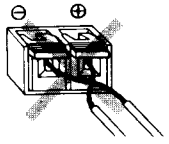
## Connection of speaker wires

① Twist the core of the speaker wires.
② Lift up the lever, and insert the core until it can no longer be seen.
③ Press down the lever, and pull the cord gently to be sure that it is secure.




**Notes:**

1. To prevent damage to circuitry, never short-circuit positive (+) and negative (−) speaker terminals.
2. Be sure to only connect positive (+) cords to positive (+) terminals, and negative (−) cords to negative (−) terminals.
3. Connections of speaker wires should be made before connecting the AC power supply cords.



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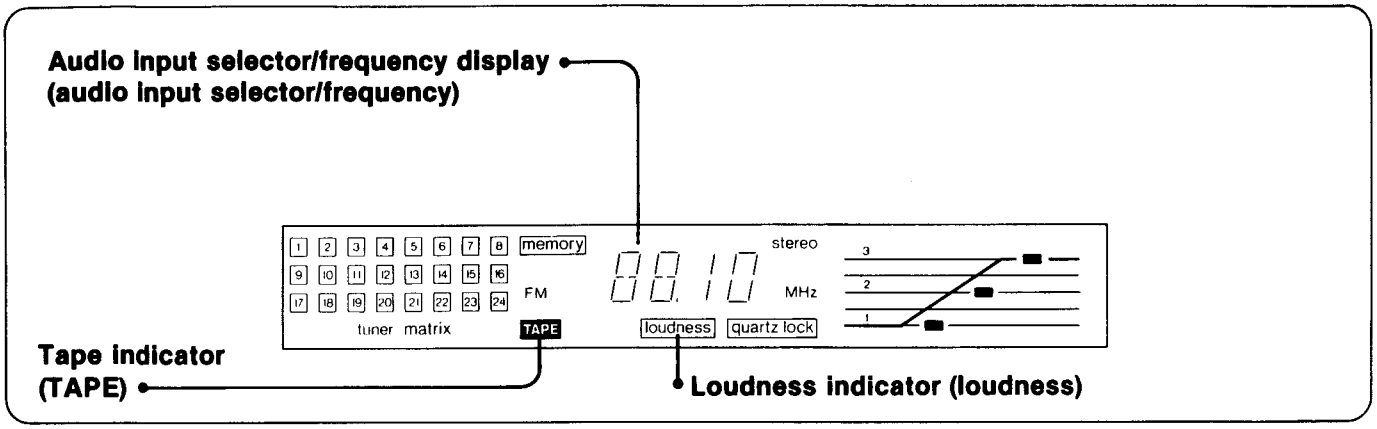
# ■ FRONT PANEL CONTROLS AND FUNCTIONS

## Amplifier section




**Power switch (power )**

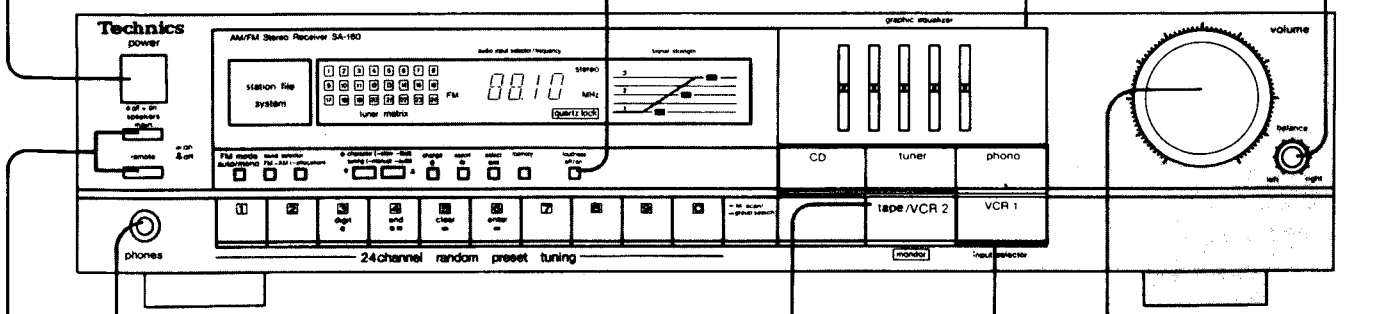
### Equalizer controls (graphic equalizer)

These controls are used to adjust the levels within each frequency band. The levels can be varied continuously over a range of +10 dB ~ −10 dB. By sliding the controls at each of the indicated frequencies in the "+" direction, the frequencies in that band are boosted, and by sliding them in the "−" direction, the frequencies in that band are attenuated.

### Loudness switch (loudness)

Set to the "on" position (The loudness indicator will illuminate.) when listening to music at low volume. Auditory perception of sound in the low frequency range falls off at low volume but when the switch is in this position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

**Balance control (balance)**




**Headphones jack (phones)**

**Volume-control (volume)**

### Speaker selectors (speakers)

These selectors are used to switch the speaker systems ON and OFF.

### Tape-monitor switch (monitor)

Press this button to listen to tape.
No other sources selected by the input selector can be heard while the tape indicator is illuminated. To listen to some other source, press this button once again.

### Input selectors (input selector)

These selectors are used to select the sound source to be heard, such as a disc, radio broadcast, etc.

The selected sound is shown on the audio input selector/frequency display.

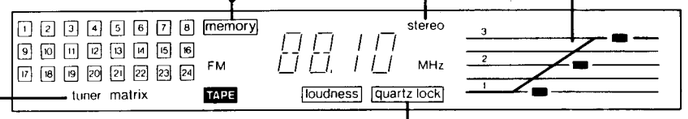
## Tuner section

**FM stereo indicator (stereo)**
This indicator automatically illuminates when an FM stereo broadcast is being received.
**Note:** It will not illuminate if the FM mode selector is pressed.

**Memory indicator (memory)**
This indicator illuminates when the memory button is pressed.

**Signal-strength indicators (signal strength)**
These indicators show the relative strength of broadcast signals being received by the antenna. The best condition for reception, for FM and AM, is when the indicators illuminate completely to the top.

**Preset channel matrix display (tuner matrix)**




**Quartz-lock indicator (quartz lock)**
This indicator illuminates when tuned precisely to an FM or AM station.

**FM mode selector (FM mode)**
This unit automatically switches to the stereo mode when a stereo broadcast is received. Press this selector to listen in the monaural mode. The stereo indicator will not illuminate in the monaural mode.

**Group select button (select)**

**Assort-mode select button (assort)**

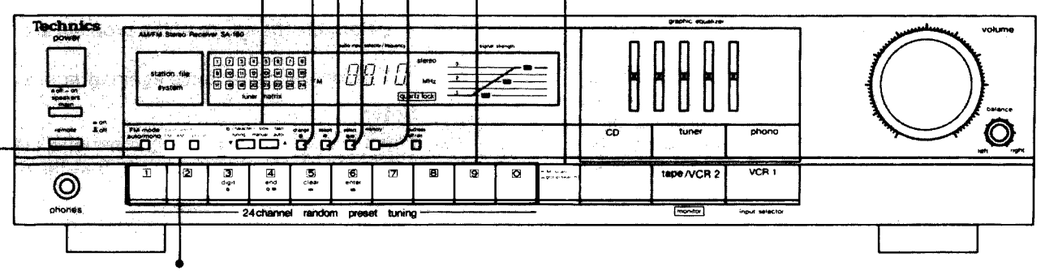
**Change-mode select button (change)**

**Character-input/tuning buttons (character/tuning)**

**Memory button (memory)**
This button is used when preset memory setting of the preset-tuning buttons is made.

**Preset tuning buttons (1 ~ 0) (24 channel random preset tuning)**
These buttons are used to preset FM and AM broadcast frequencies into the memory of this unit, and are also pressed to select the desired preset frequencies.
**Note:**
The buttons marked [3] ~ [6] are also used to listen to radio broadcasts arranged in convenient groups.

**Memory-scan/group-search button (-M. scan/–group search)**




**Band selectors (band selector)**

**FM:** Press this button to listen to an FM broadcast.
**AM:** Press this button to listen to an AM broadcast.
**allocation:**
When the AM button is pressed for about 4 seconds, the AM frequency step will change to 10 kHz per step. (This step is set to 9 kHz before shipment.) In order to return to the original frequency indication, press this button for about 4 seconds again.

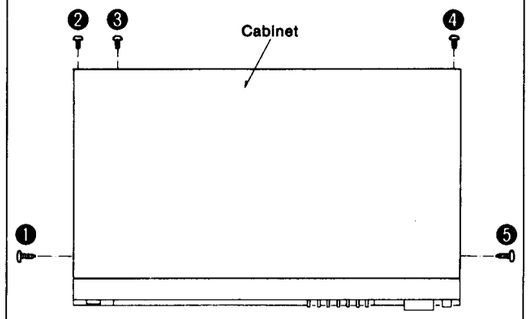


## ■ DISASSEMBLY INSTRUCTIONS

**"ATTENTION SERVICER"**
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

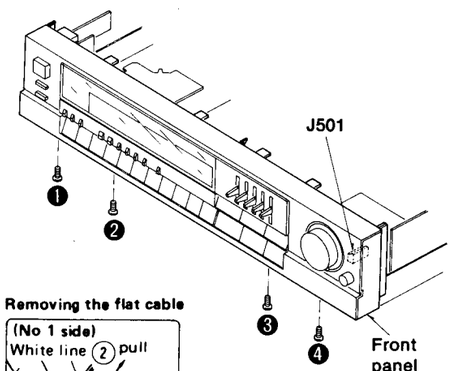
| Ref. No. 1 | How to remove the cabinet |
|---|---|
| Procedure 1 | |

• Remove the 5 screws (❶~❺).

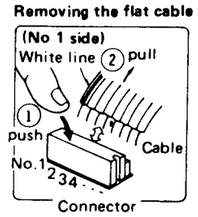



| Ref. No. 2 | How to remove the front panel |
|---|---|
| Procedure 1→2 | |

1. Remove the 4 screws (❶~❹).
2. Remove the flat cable (J501).



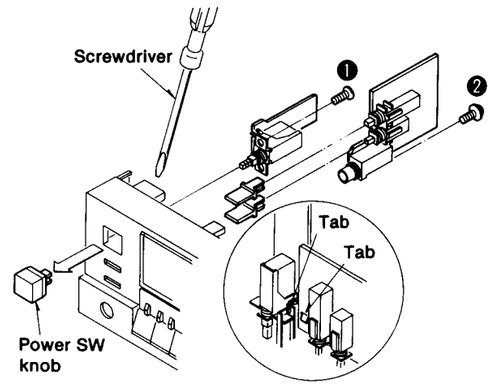

**Removing the flat cable**




| Ref. No. 3 | How to remove the power SW P.C.B. and speakers SW/headphones P.C.B. |
|---|---|
| Procedure 1→2→3 | |

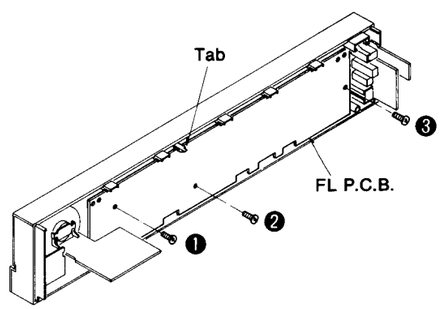
• **How to remove the power SW P.C.B.**
1. Remove the power SW knob.
2. Remove the 1 screw (❶).
3. Release the tab.

• **How to remove the speakers SW/headphones P.C.B.**
1. Remove the 1 screw (❷).




| Ref. No. 4 | How to remove the FL P.C.B. |
|---|---|
| Procedure 1→2→4 | |

1. Remove the 3 screws (❶~❸).
2. Release the tab.



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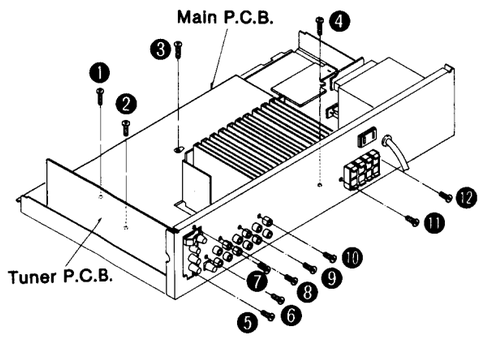
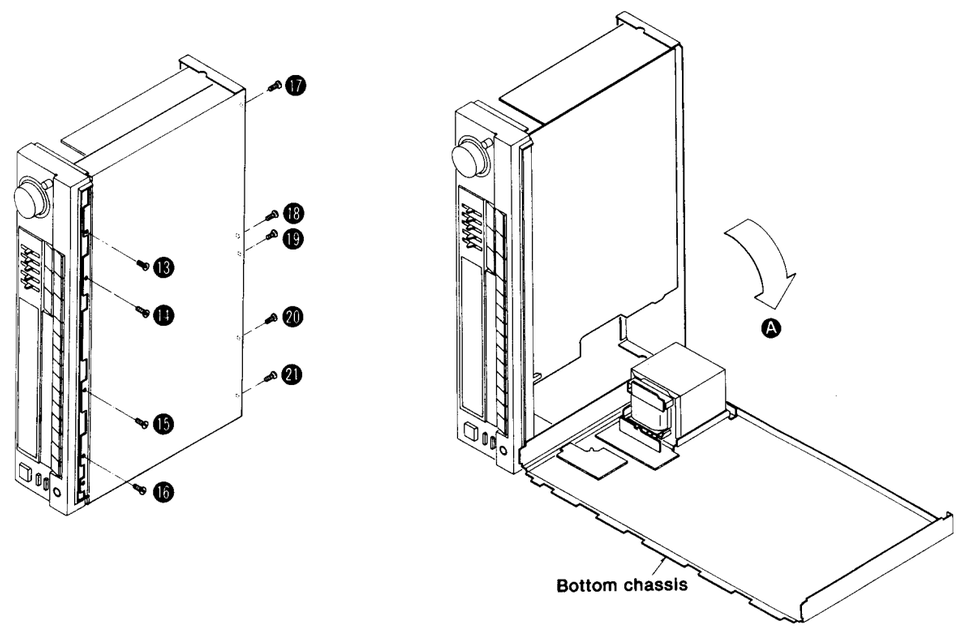
| Ref. No. 5 | How to remove the tuner P.C.B. and main P.C.B. |
|---|---|
| Procedure 1→2→5 | |

1. Remove the 12 screws (❶~⓬).
2. Remove the tuner P.C.B. and main P.C.B.



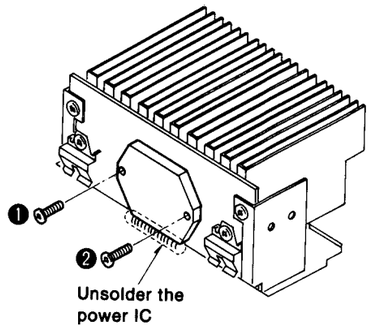

**How to check the main P.C.B.**

1. Remove the 4 screws (❶~❹) in above figure.
2. Remove the 9 screws (⓭~㉑).
3. Remove the bottom chassis in the direction of the arrow (Ⓐ).




| Ref. No. 6 | How to remove the power IC. |
|---|---|
| Procedure 1→2→5→6 | |

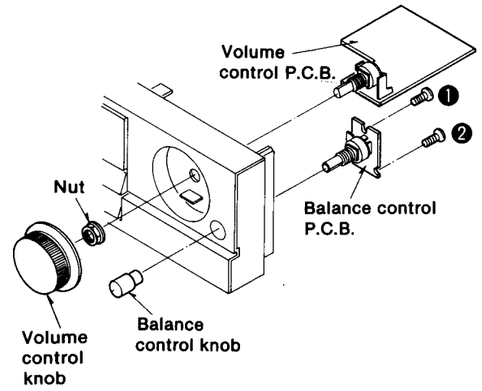
1. Unsolder the power IC.
2. Remove the 2 screws (❶, ❷).




**Note:** When mounting the power IC, apply silicon terminal compound (SZZ0L15) to the rear of the power IC.

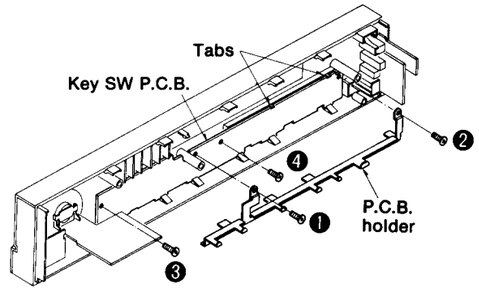
| Ref. No. 7 | How to remove the volume control P.C.B. and balance control P.C.B. |
|---|---|
| Procedure 1→2→4→7 | |

- **How to remove the volume control P.C.B.**
  1. Remove the volume control knob.
  2. Remove the nut.
- **How to remove the balance control P.C.B.**
  1. Remove the balance control knob.
  2. Remove the 2 screws (❶, ❷).




| Ref. No. 8 | How to remove the key switch P.C.B. |
|---|---|
| Procedure 1→2→4→8 | |

1. Remove the 2 screws (❶, ❷) and remove the P.C.B. holder.
2. Remove the 2 screws (❸, ❹).
3. Release the Tabs.




## ■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:
- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:
1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

**Note:**

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

## ■ BEFORE REPAIR AND ADJUSTMENT

1. Turn off the power, discharge both power supply capacitors (C701, C702 4700μF) through a 10Ω 5W resistor to ground. Do not short between C701 and C702. It may damage the capacitors.
2. After completion of repair, slowly apply the primary voltage by using a variac to avoid over current. Current consumption at 50Hz/60Hz in no signal mode should by shown with respect to supply voltage 220V/240V.

| Power supply voltage | | AC 220V | AC 240V |
|---|---|---|---|
| Consumed current | 50/60Hz | 120~320mA | 100~300mA |

# ■ MEASUREMENTS AND ADJUSTMENTS

## ■ FM

### Control positions and equipment used

- FM signal generator (FM-SG).
- Stereo modulator
- Distortion analyser
- Oscilloscope
- AC and DC electronic voltmeter (EVM)
- Frequency counter
- Choke coil (100μH)
- Resistor (100kΩ)

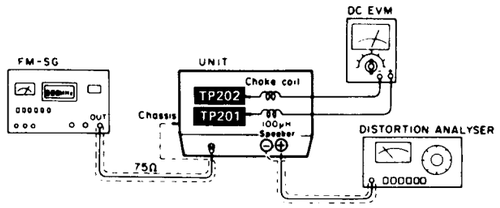
**Note:** For **Z201**, **Z202**, **L321**, **L322** and **L324**, adjusted parts are supplied. So, do not turn the cores of these parts.

### FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" position.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **T201** core so that voltage measured in signal mode is **0mV** (0±20mV) in **300mV** range.
5. Adjust **T202** so that the distortion factor of Lch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of Lch and Rch are nearly the same with each other to minimum.

**Note:**
The adjusting screwdriver used should be made of resin.

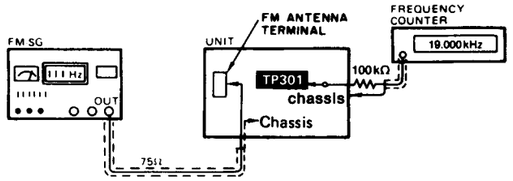
FM SIGNAL GENERATOR CONDITION
Modulation.....100%
Modulation frequency.....1kHz (MONO)
Output level.....66dB




### MPX VCO ADJUSTMENT

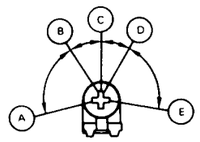
1. Test equipment connection is shown in figure.
2. Set the unit to "**FM auto**" position.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **VR301** for **19.00±0.03kHz** on frequency counter reading.

FM SIGNAL GENERATOR CONDITION
Modulation.....0% (non-modulation)
Output level.....66dB




### ★USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR301** until stereo indicator lights up. Cement arm of **VR301** as shown in figure.



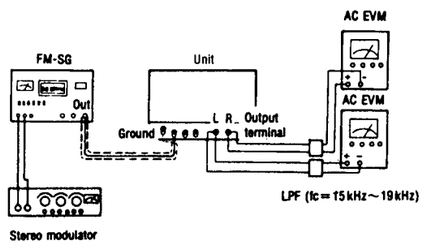

VR301

Ⓐ – Ⓑ  Ⓓ – Ⓔ : Stereo OFF position
Ⓑ – Ⓓ : Stereo ON position (indicator lighting)
Ⓒ : Adjust point of Pilot circuit

### FM STEREO SEPARATION ADJUSTMENT (For [EG] area.)

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" mode.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **VR302** so that the R-CH output is minimized when stereo modulator is in "L"(L-CH modulation) mode.

FM SIGNAL GENERATOR CONDITION
Modulation.....Stereo "L" mode or "R" mode 90%, Pilot 10%
Modulation frequency.....1kHz (Pilot 19kHz)
Output level.....66dB



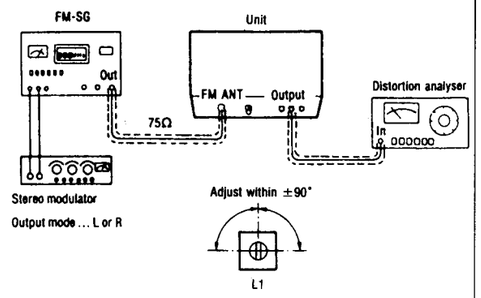



### FM STEREO DISTORTION ADJUSTMENT (For [EG] area.)

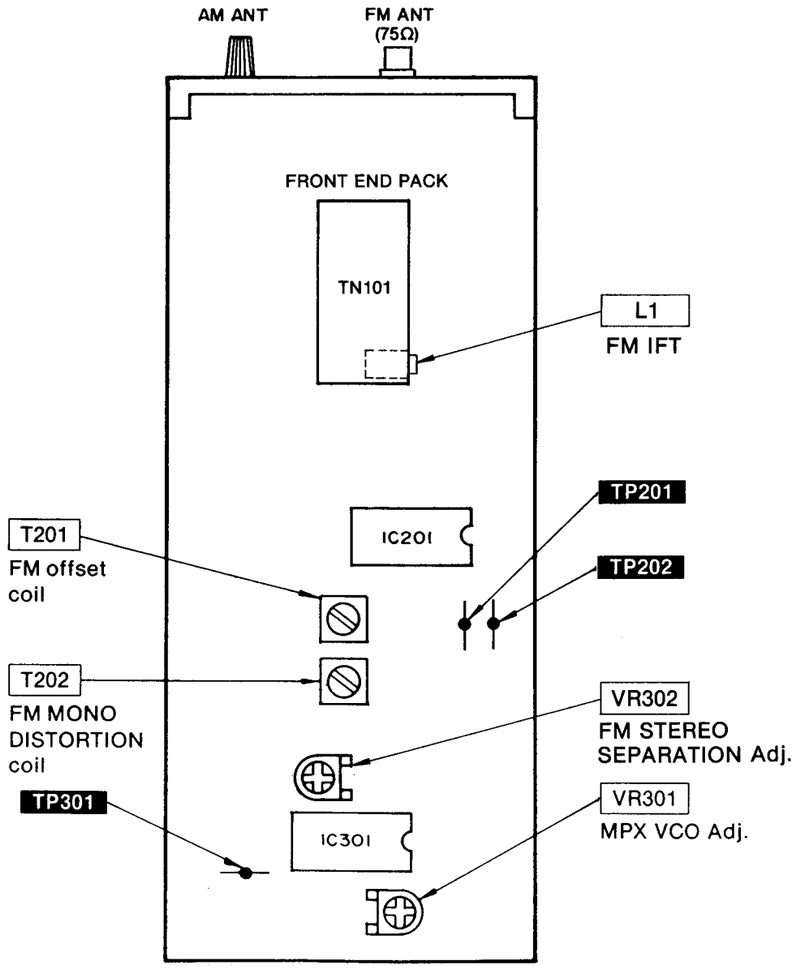
1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" mode.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **L1** so that the distortion factor of L-CH is minimized.
5. Make sure that the distortion factors of L-CH and R-CH are nearly the same with each other to minimum.

**Notes:**
1. The adjusting screwdriver used should be made of resin.
2. L1 should be rotated no more 1/4 turn (90 deg.) on either side.

FM SIGNAL GENERATOR CONDITION
Modulation.....Stereo "L" mode or "R" mode 100%
Modulation frequency.....1kHz (Pilot 19kHz)
Output level.....66dB




### • Adjustment points






D

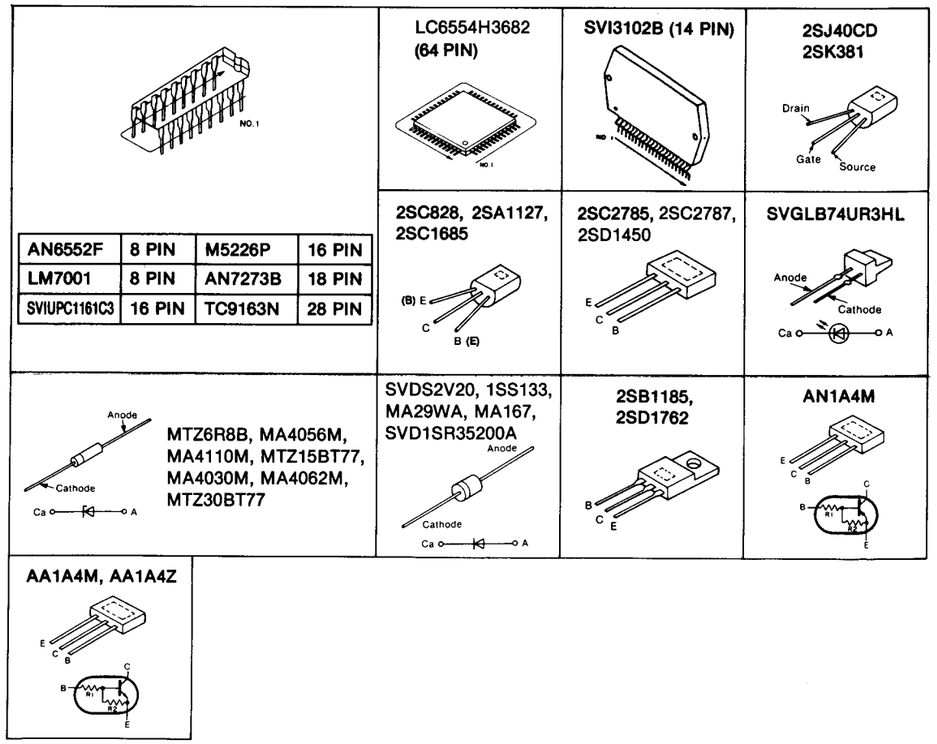
## ■ FUNCTION OF TERMINAL

### • IC901 (LC6554H3682): microcomputer

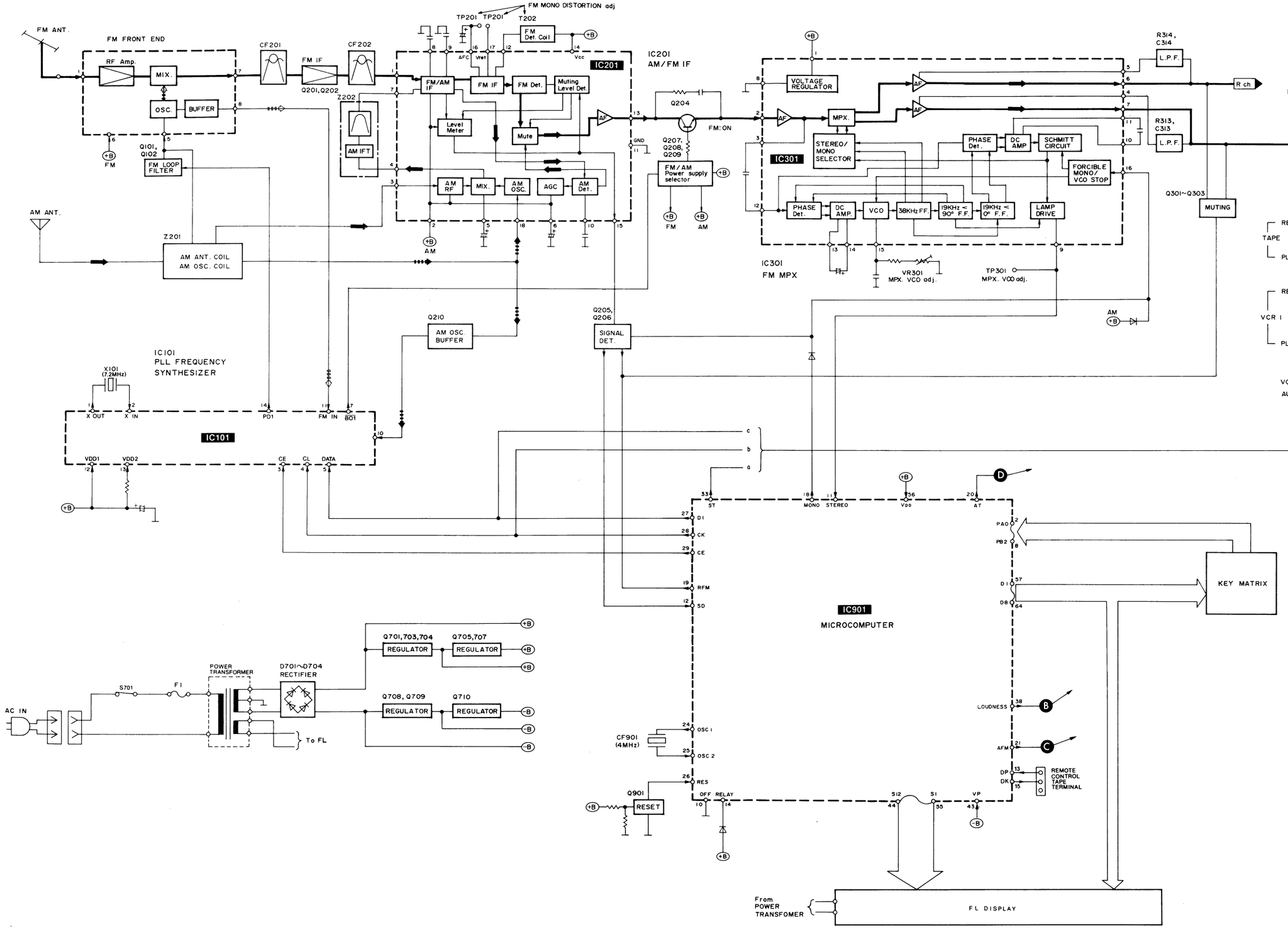
| PIN NO. | MARK | I/O | DESCRIPTION OF TERMINAL |
|---|---|---|---|
| 1 | S13 | O | Segment signal output |
| 2 ∫ 5 • 6 ∫ 8 | PA0 ∫ PA3 • PB0 ∫ PB2 | I | Key return signal input |
| 9 | STAND BY | I | Power supply terminal |
| 10 | OFF | I | Power ON/OFF input |
| 11 | STEREO | I | Stereo signal input |
| 12 | SD | I | SD signal input |
| 13 | DP | I/O | Deck control terminal |
| 14 | RELAY | O | Relay control output |
| 15 ∫ 17 | NC | —— | Not connected |
| 18 | MO | O | Auto/mono changeover terminal |
| 19 | RFM | O | Muting control output |
| 20 | AT | O | Attenuator control output |
| 21 | AFM | O | AF signal muting control output |
| 22 | TP | —— | Ground terminal |
| 23 | $V_{SS}$ | —— | Ground terminal |
| 24 | OSC1 | I | Oscillator terminal |
| 25 | OSC2 | O | Oscillator terminal |
| 26 | RES | I | Reset signal input |
| 27 | PF0/D1 | O | Serial data output terminal |
| 28 | PF1/CK | O | Clock signal terminal for serial data |
| 29 | PF2/CE | O | Chip enable terminal |
| 30 | PF3/$\overline{INT}$ | I | Remote control input |
| 31 | D1 | —— | Ground terminal |
| 32 | CK | —— | Ground terminal |
| 33 | ST | O | Control signal terminal for IC401 (TC9163N) |
| 34 ∫ 37 | NC | —— | Not connected |
| 38 | LOUDNESS | O | Loudness control output |
| 39 • 40 | PJ0 (R) • PJ1 (F) | O | Volume motor drive output |
| 41 • 42 | NC | —— | Not connected |
| 43 | $V_P$ | I | Power supply terminal (negative voltage) |
| 44 ∫ 55 | S2 ∫ S12 | O | Segment signal output |
| 56 | $V_{DD}$ | I | Power supply terminal (positive voltage) |
| 57 ∫ 64 | D1 ∫ D8 | O | Digit signal and key scan signal output |

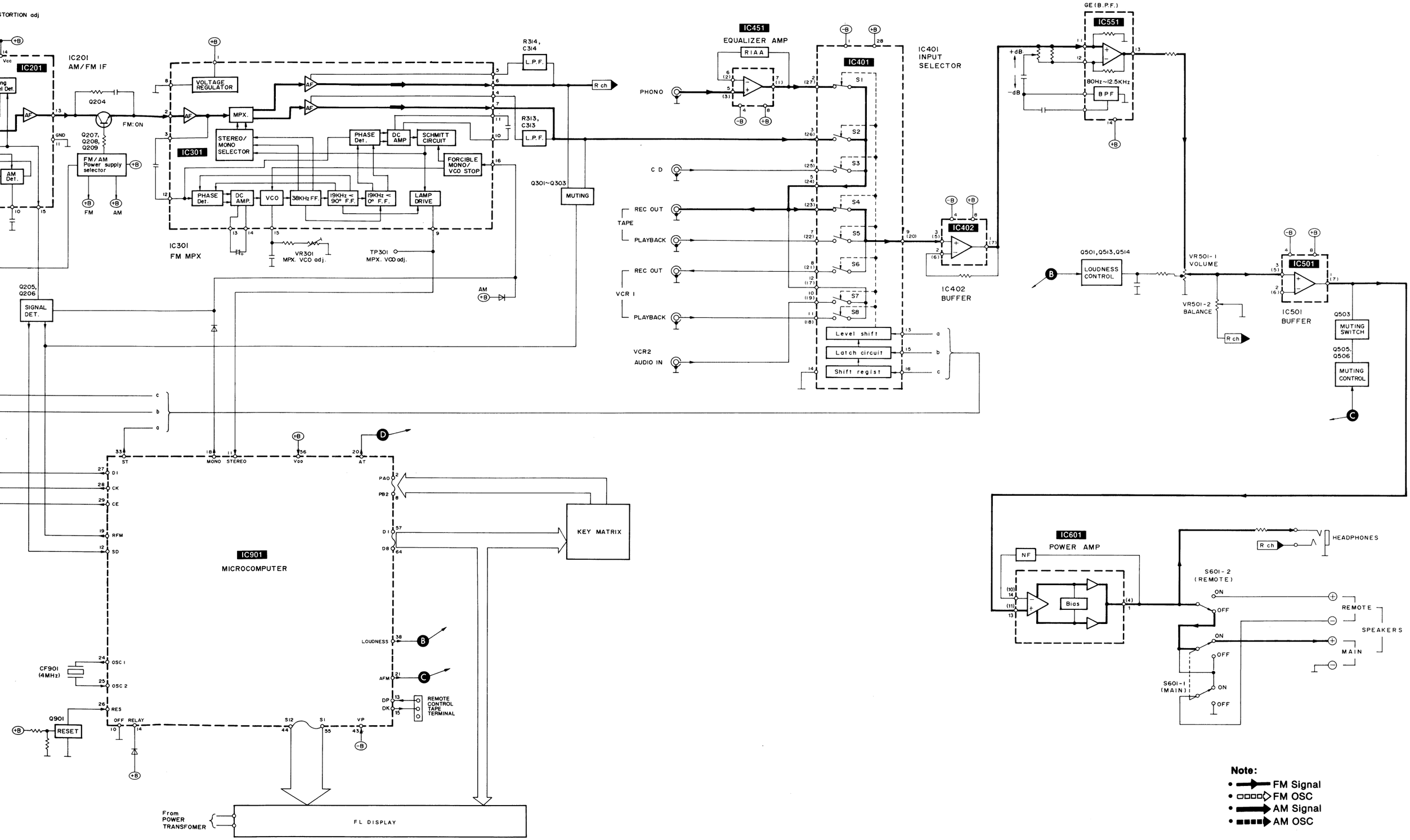


## ■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



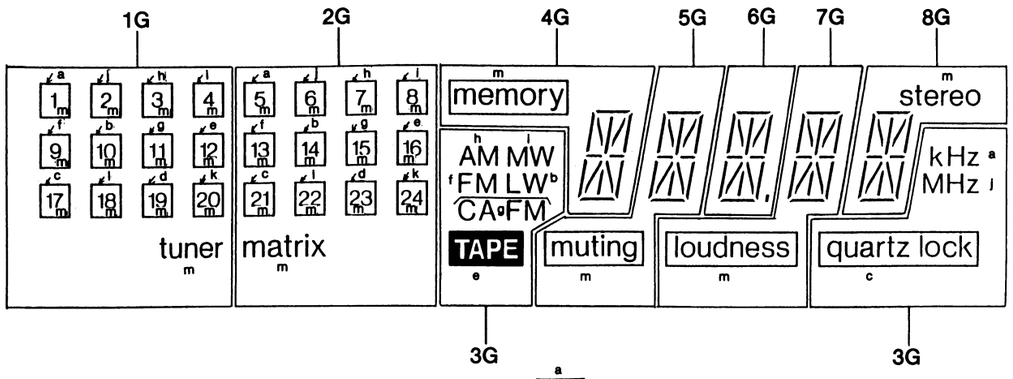
# ■ BLOCK DIAGRAM




STORTION adj
IC201
AM/FM IF
Vcc
AM Det.
FM Det.
Q204
FM:ON
Q207, Q208, Q209
FM/AM Power supply selector
FM
AM
GND
IC301
FM MPX
VOLTAGE REGULATOR
MPX.
STEREO/ MONO SELECTOR
PHASE Det.
DC AMP.
VCO
38KHz FF.
19KHz ≈ 90° F.F.
19KHz ≈ 0° F.F.
LAMP DRIVE
PHASE Det.
DC AMP
SCHMITT CIRCUIT
FORCIBLE MONO/ VCO STOP
AF
R314, C314
L.P.F.
R ch
R313, C313
L.P.F.
Q301~Q303
MUTING
VR301 MPX. VCO adj.
TP301 MPX. VCO adj.
AM
Q205, Q206
SIGNAL DET.
IC451
EQUALIZER AMP
RIAA
IC401
IC401 INPUT SELECTOR
S1
S2
S3
S4
S5
S6
S7
S8
PHONO
C D
TAPE
REC OUT
PLAYBACK
VCR I
REC OUT
PLAYBACK
VCR2
AUDIO IN
Level shift
Latch circuit
Shift regist
IC402
IC402 BUFFER
GE (B.P.F.)
IC551
+dB
-dB
80Hz~12.5KHz
BPF
Q501, Q513, Q514
LOUDNESS CONTROL
VR501-1 VOLUME
VR501-2 BALANCE
R ch
IC501
IC501 BUFFER
Q503
MUTING SWITCH
Q505, Q506
MUTING CONTROL
C
B
D
IC901
MICROCOMPUTER
ST
MONO
STEREO
Vdd
AT
DI
CK
CE
RFM
SD
PA0
PB2
DI
D8
KEY MATRIX
LOUDNESS
AFM
DP
DK
REMOTE CONTROL TAPE TERMINAL
CF901 (4MHz)
OSC 1
OSC 2
RES
Q901
RESET
OFF
RELAY
S12
S1
VP
From POWER TRANSFOMER
FL DISPLAY
IC601
POWER AMP
NF
Bias
HEADPHONES
R ch
S601-2 (REMOTE)
ON
OFF
REMOTE
SPEAKERS
MAIN
S601-1 (MAIN)
Note:
FM Signal
FM OSC
AM Signal
AM OSC

# ■ DESCRIPTION OF FLUORESCENT DISPLAY

**• Grid assignment**




**• Pin connection**

| PIN NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | NP | F2 | NP | NP | m | NP | 8G | NP | NP | 7G | NP | NP | 6G | NP | 5G | NP | NP | 4G | NP | 3G | NP | 2G |

| PIN NO. | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | NP | 1G | NP | NP | NP | a | j | h | i | f | b | g | e | c | l | d | k | NP | NP | NP | F1 | NP |

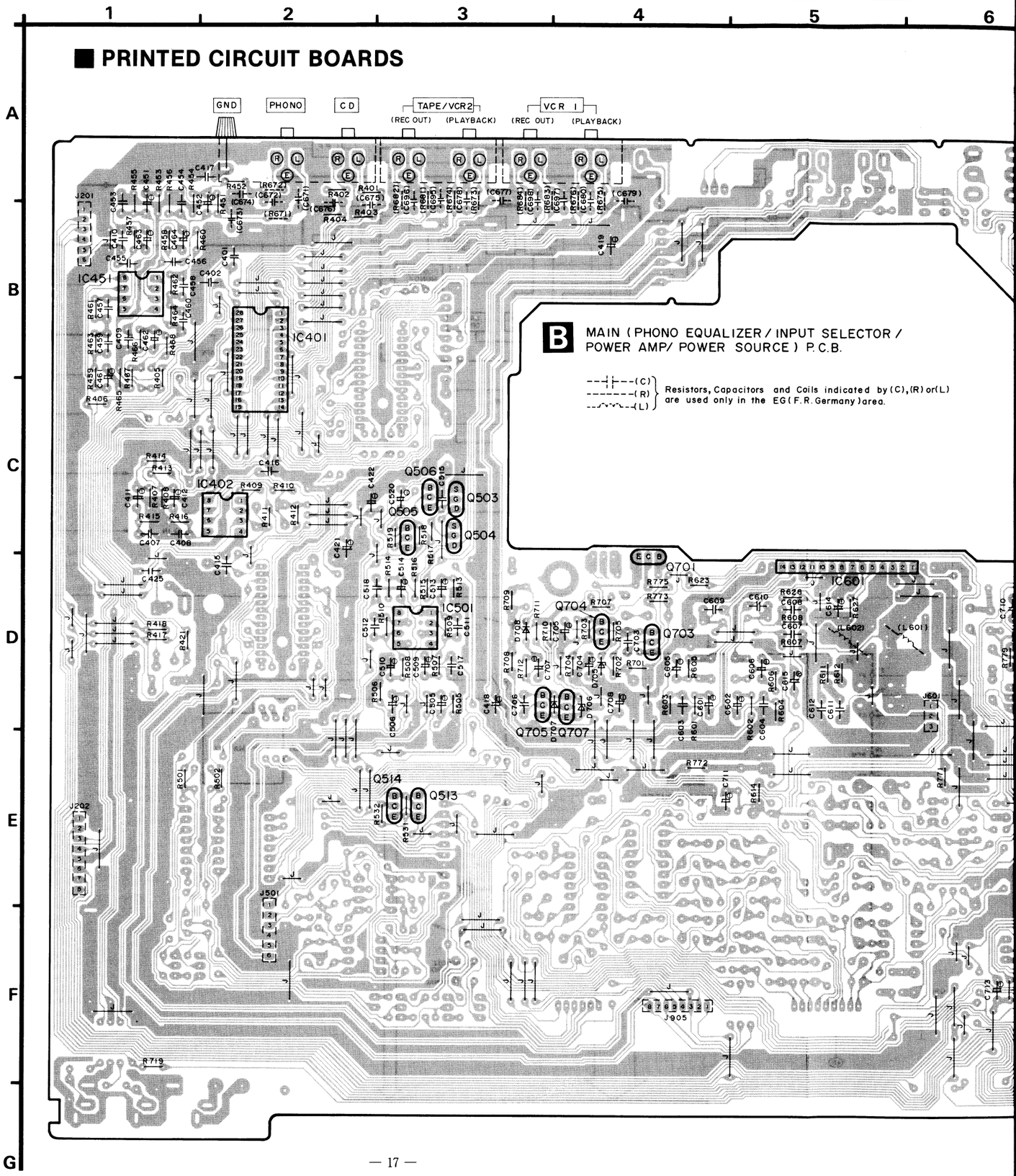
**• Anode connection**

| | 1G | 2G | 3G | 4G | 5G | 6G | 7G | 8G |
|---|---|---|---|---|---|---|---|---|
| a | □ 1 | □ 5 | KHz | a | a | a | a | a |
| b | □ 10 | □ 14 | LW | b | b | b | b | b |
| c | □ 17 | □ 21 | quartz lock | c | c | c | c | c |
| d | □ 19 | □ 23 | - | d | d | d | d | d |
| e | □ 12 | □ 16 | TAPE | e | e | e | e | e |
| f | □ 9 | □ 13 | FM | f | f | f | f | f |
| g | □ 11 | □ 15 | CAFM | g | g | g | g | g |
| h | □ 3 | □ 7 | AM | h | h | h | h | h |
| i | □ 4 | □ 8 | MW | i | i | i | i | i |
| j | □ 2 | □ 6 | MHz | j | j | j | j | j |
| k | □ 20 | □ 24 | - | k | k | k | k | k |
| ℓ | □ 18 | □ 22 | - | ℓ | ℓ | ℓ | ℓ | ℓ |
| m | 1~4 9~12 17~20 tuner | 5~8 13~16 21~24 matrix | - | memory | muting | D.P | loud ness | stereo |





# ■ PRINTED CIRCUIT BOARDS



8G

m
stereo
kHz a
MHz i
tz lock

3G

## ■ PRINTED CIRCUIT BOARDS

**B** MAIN ( PHONO EQUALIZER / INPUT SELECTOR / POWER AMP/ POWER SOURCE ) P.C.B.

---┤├---(C)
-------(R)
---∿∿---(L)
} Resistors, Capacitors and Coils indicated by (C),(R) or(L) are used only in the EG( F.R. Germany )area.

GND PHONO CD TAPE/VCR2 (REC OUT) (PLAYBACK) VCR 1 (REC OUT) (PLAYBACK) SPEAKERS SPEAKER IMPEDANCE (S702) REMOTE MAIN

IC451 IC401 IC402 IC501 IC601 Q506 Q503 Q505 Q504 Q514 Q513 Q701 Q704 Q703 Q705 Q707 Q708 Q710 Q709 J201 J202 J501 J905 J903 J902 J901 J602 J701 D781 D701 D702 D703 D704 C781 C771 C701 C702 L601 L602

T701 POWER TRANSFORMER

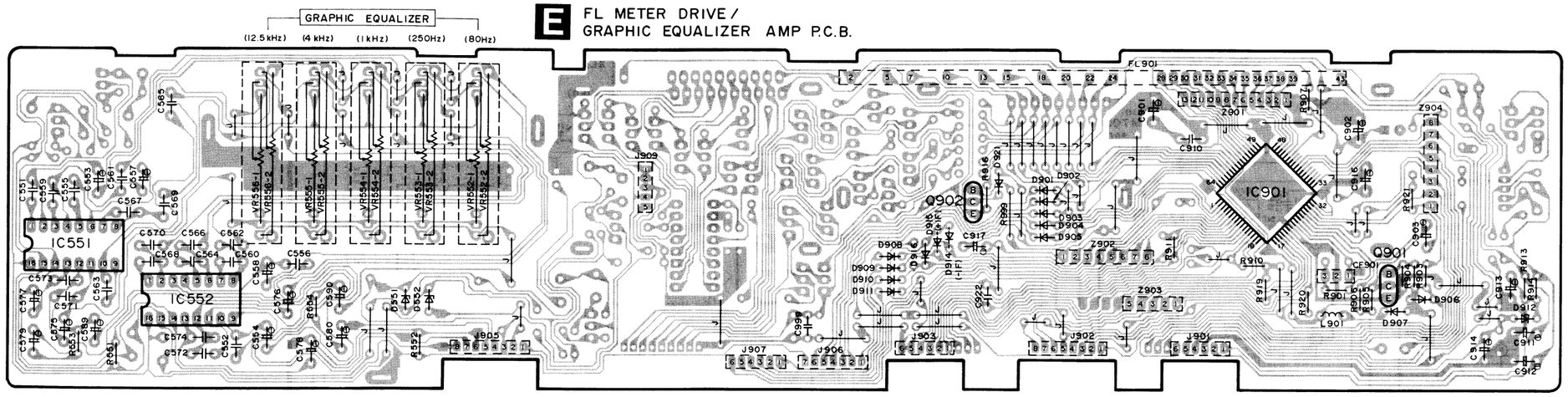
F1
For (EX, EG, EH) areas---- T800mA
For (XL) area---------- T630mA

**J** POWER SOURCE P.C.B.

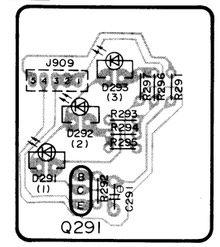
AC IN
(AC220V-(EX, EH)
AC240V-(XL)
50/60Hz

For (EG) area.
AC IN
(AC220V 50/60Hz)
L791
L792

## E FL METER DRIVE / GRAPHIC EQUALIZER AMP P.C.B.

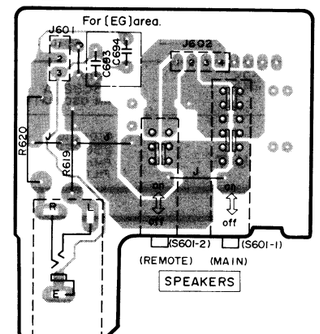



## G LED P.C.B.

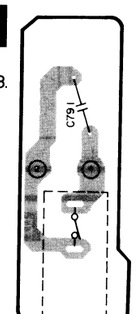



(Signal strength ind.)

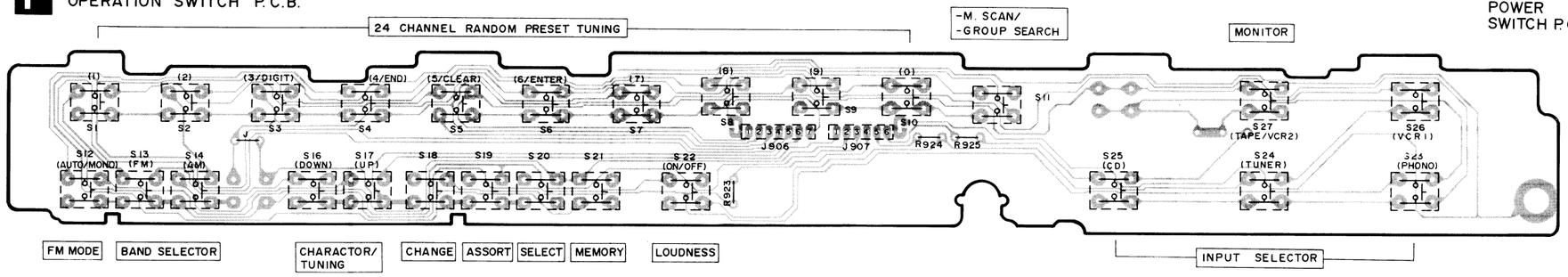
## H SPEAKER SWITCH/ HEADPHONES JACK P.C.B.



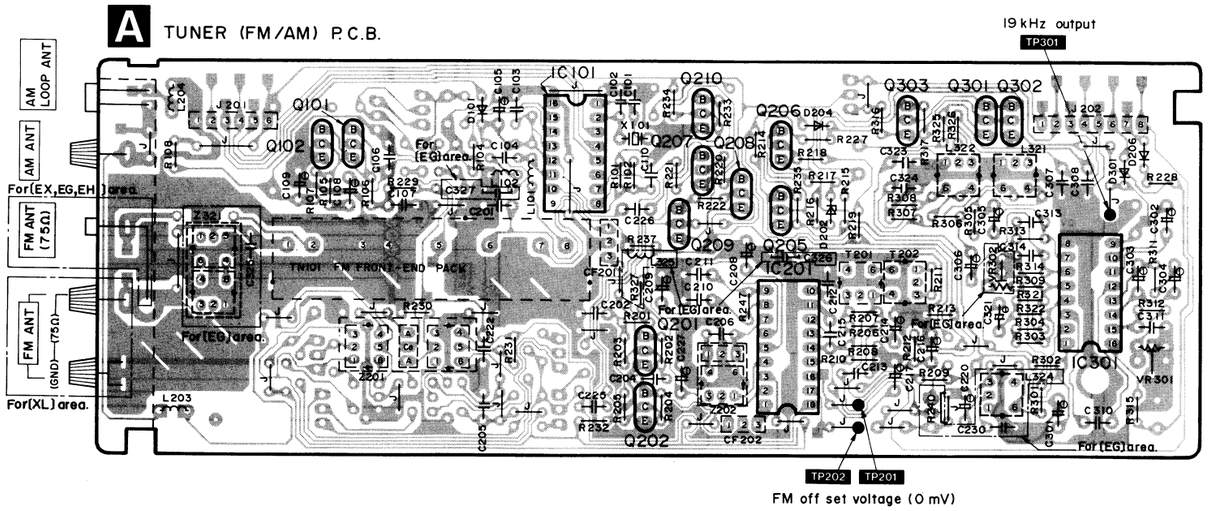

## I POWER SWITCH P.C.B.



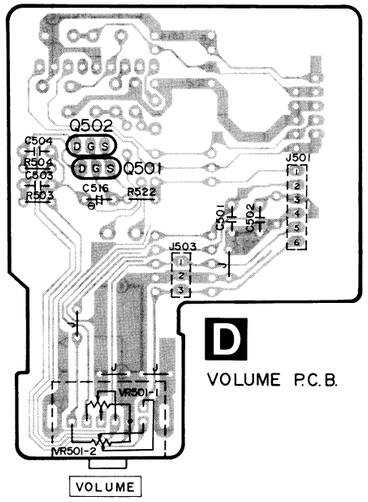

## F OPERATION SWITCH P.C.B.


24 CHANNEL RANDOM PRESET TUNING
-M. SCAN/ -GROUP SEARCH
MONITOR
(1) (2) (3/DIGIT) (4/END) (5/CLEAR) (6/ENTER) (7) (8) (9) (0)
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11
S12 (AUTO/MONO) S13 (FM) S14 (AM) S16 (DOWN) S17 (UP) S18 S19 S20 S21 S22 (ON/OFF)
S25 (CD) S24 (TUNER) S27 (TAPE/VCR2) S26 (VCR1) S23 (PHONO)
INPUT SELECTOR
FM MODE
BAND SELECTOR
CHARACTOR/ TUNING
CHANGE
ASSORT
SELECT
MEMORY
LOUDNESS

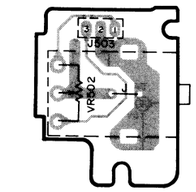
## A TUNER (FM/AM) P.C.B.



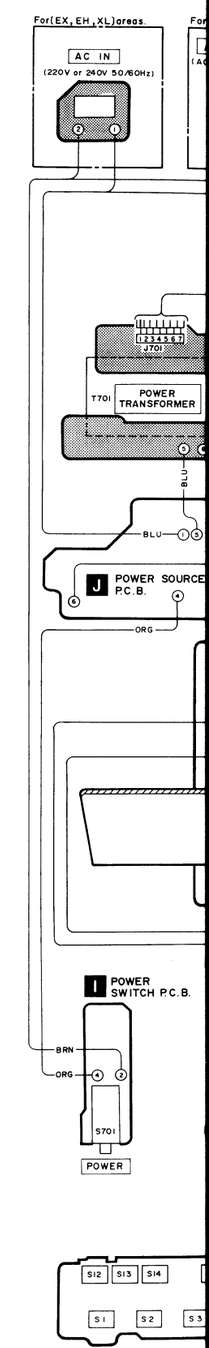

## D VOLUME P.C.B.




## C BALANCE VR. P.C.B.

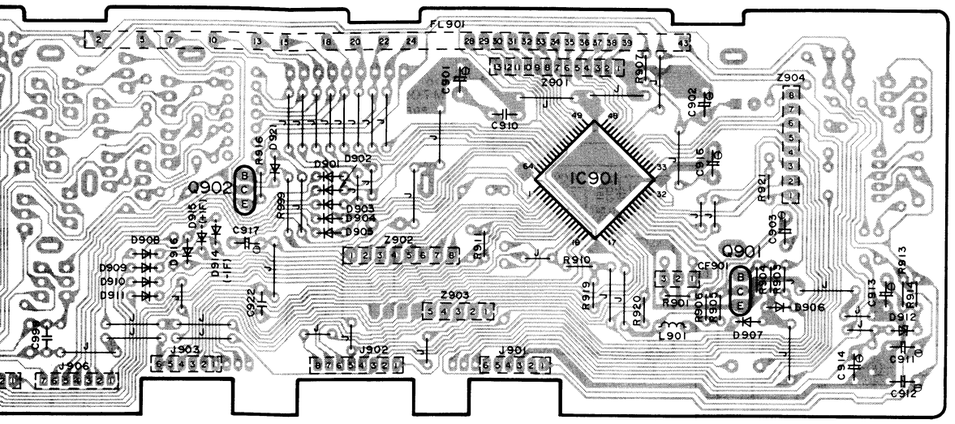



## WIRING C

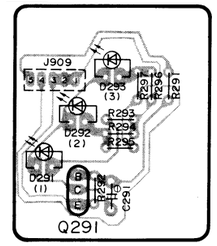


15 16 17 18 19 20

AMP P.C.B.

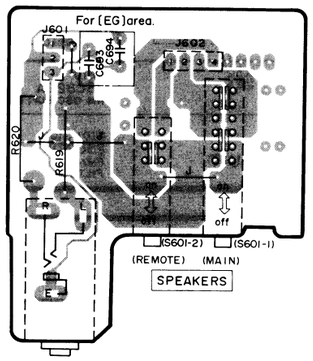



**G** LED P.C.B.

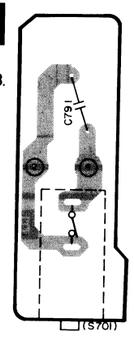



(Signal strength ind.)

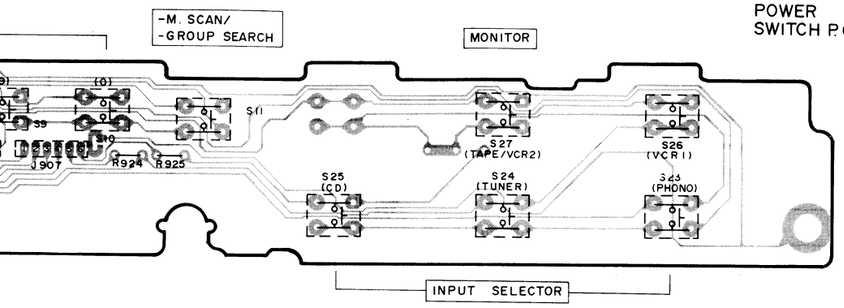
**H** SPEAKER SWITCH/ HEADPHONES JACK P.C.B.

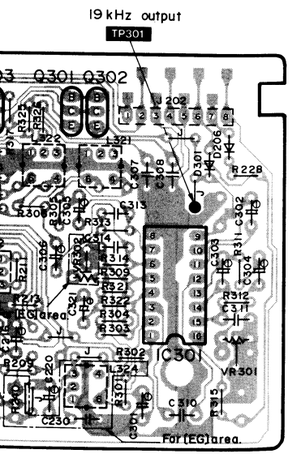



**I** POWER SWITCH P.C.B.

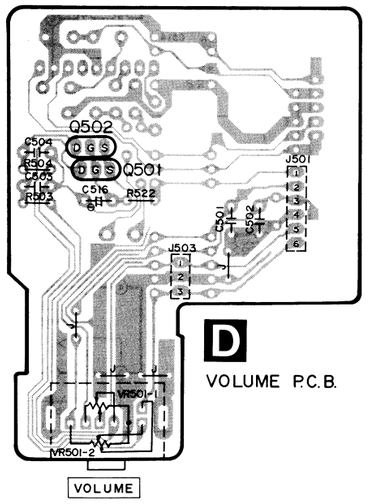



POWER PHONES



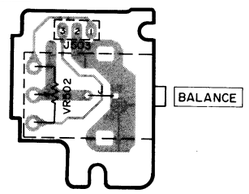




0 mV)



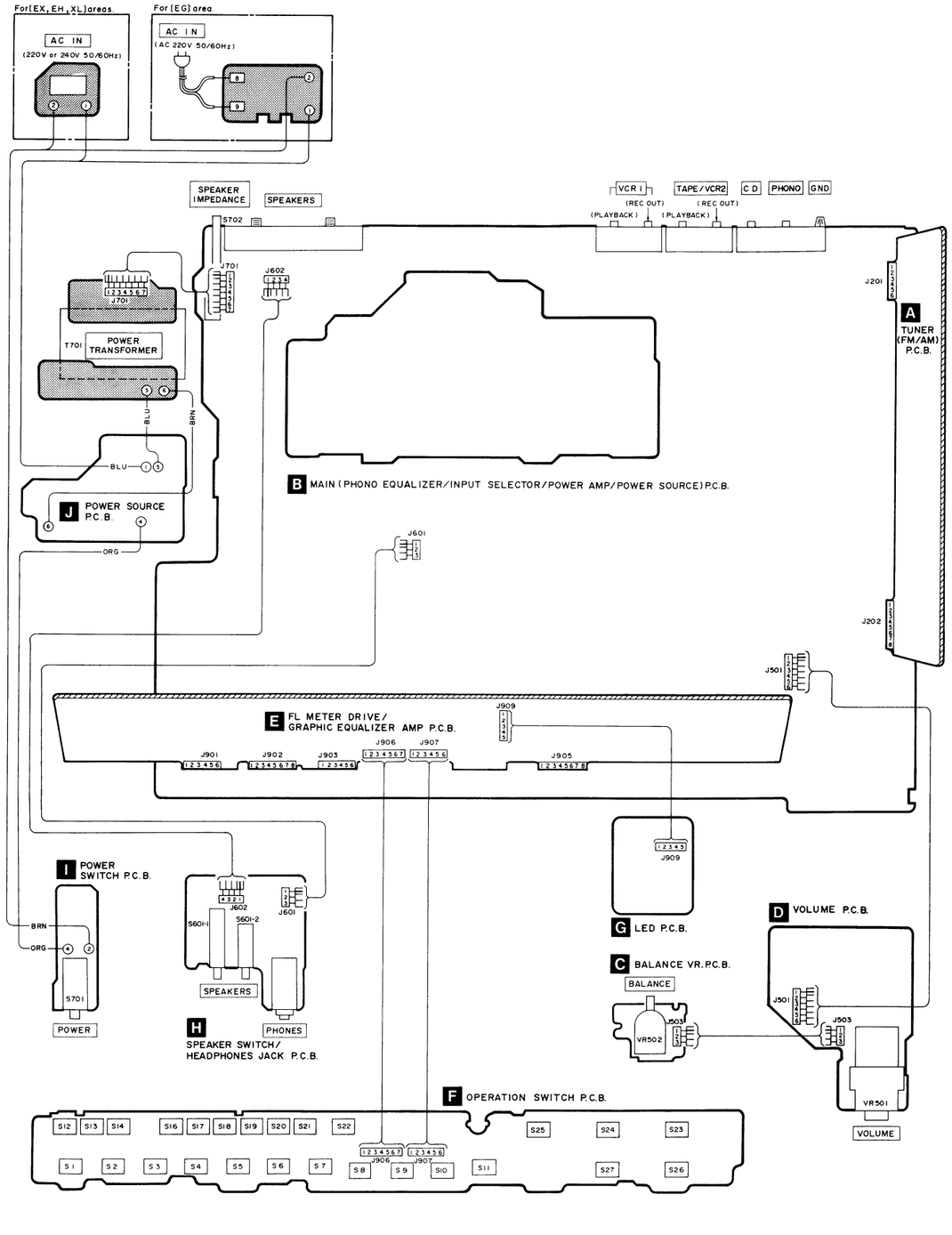

**D** VOLUME P.C.B.

**C** BALANCE VR. P.C.B.






## WIRING CONNECTION DIAGRAM



# ■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology)

**Note 1:**

- **S1~S10** : Preset tuning switches. [S1: 1, S2: 2, S3: 3, S4: 4, S5: 5, S6: 6, S7: 7, S8: 8, S9: 9, S10: 0]
- **S11** : Memory-scan/group-search switch.
- **S12** : FM mode select switch. (AUTO↔MONO)
- **S13, S14** : Band selectors. S13: FM, S14: AM
- **S16, S17** : Character-input/tuning switches. S16: down, S17: up
- **S18** : Change-mode selector.
- **S19** : Assort-mode selector.
- **S20** : Group select switch.
- **S21** : Memory switch.
- **S22** : Loudness switch.
- **S23~S27** : Input selector switches. [S23: phono, S24: tuner, S25: CD, S26: VCR1, S27: tape/VCR2]
- **S601-1, S601-2** : Speaker selectors. S601-1: main, S601-2: remote
- **S701** : Power switch in "**on**" position.
- Signal line
  - ⟹ : B.P.F. signal
  - ⟹ : FM signal
  - ▭▭▭⟹ : FM OSC
  - ━━━⟹ : AM signal
  - ▪▪▪▪⟹ : AM OSC
  - ⟹ : AF signal (Lch)
  - ▱▱▱⟹ : Phono signal
  - —≺ ≻— : Positive voltage lines
  - ---≺ ≻--- : Negative voltage lines
- Important safety notice: Components identified by △ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.
- All voltage values shown in circuitry are DC voltage in FM signal (Stereo signal) reception mode.

* Figures in ( ) Stand for DC-voltage in AM signal reception mode

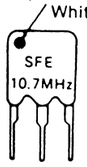
* **Caution**!
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with alminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

**Note2:**

- **Use of ceramic filters in pairs**

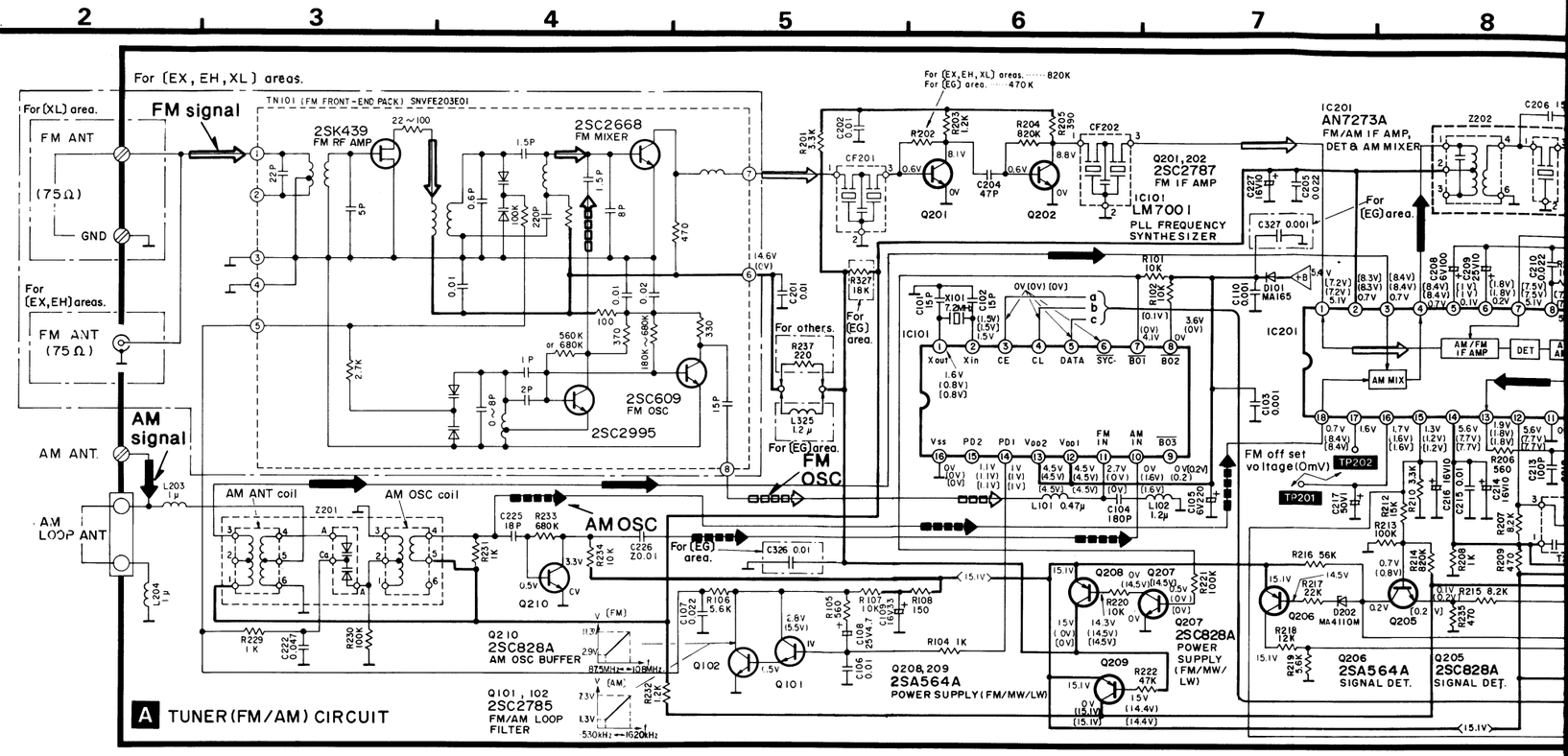
The ceramic filters (CF201, CF202) for FM-IF circuit are available in three ranks. For this circuit, be sure to use the ceramics of the same rank in a pair.
At repairing and replacement, pay close attention to the diodes (D914, D915) for use as different diodes must be used depending on each rank of the ceramic filters.

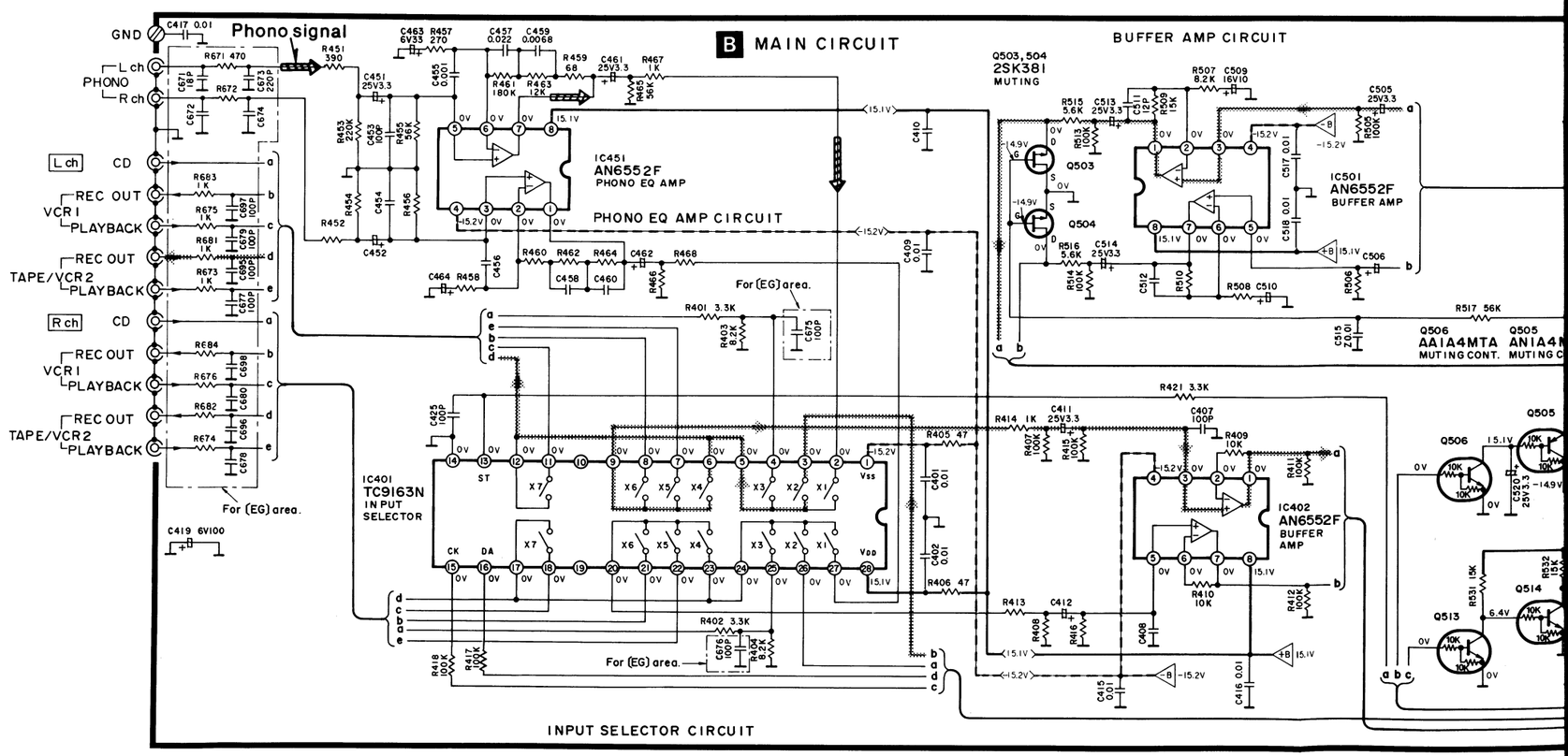
Color marking (Red, Black or White)

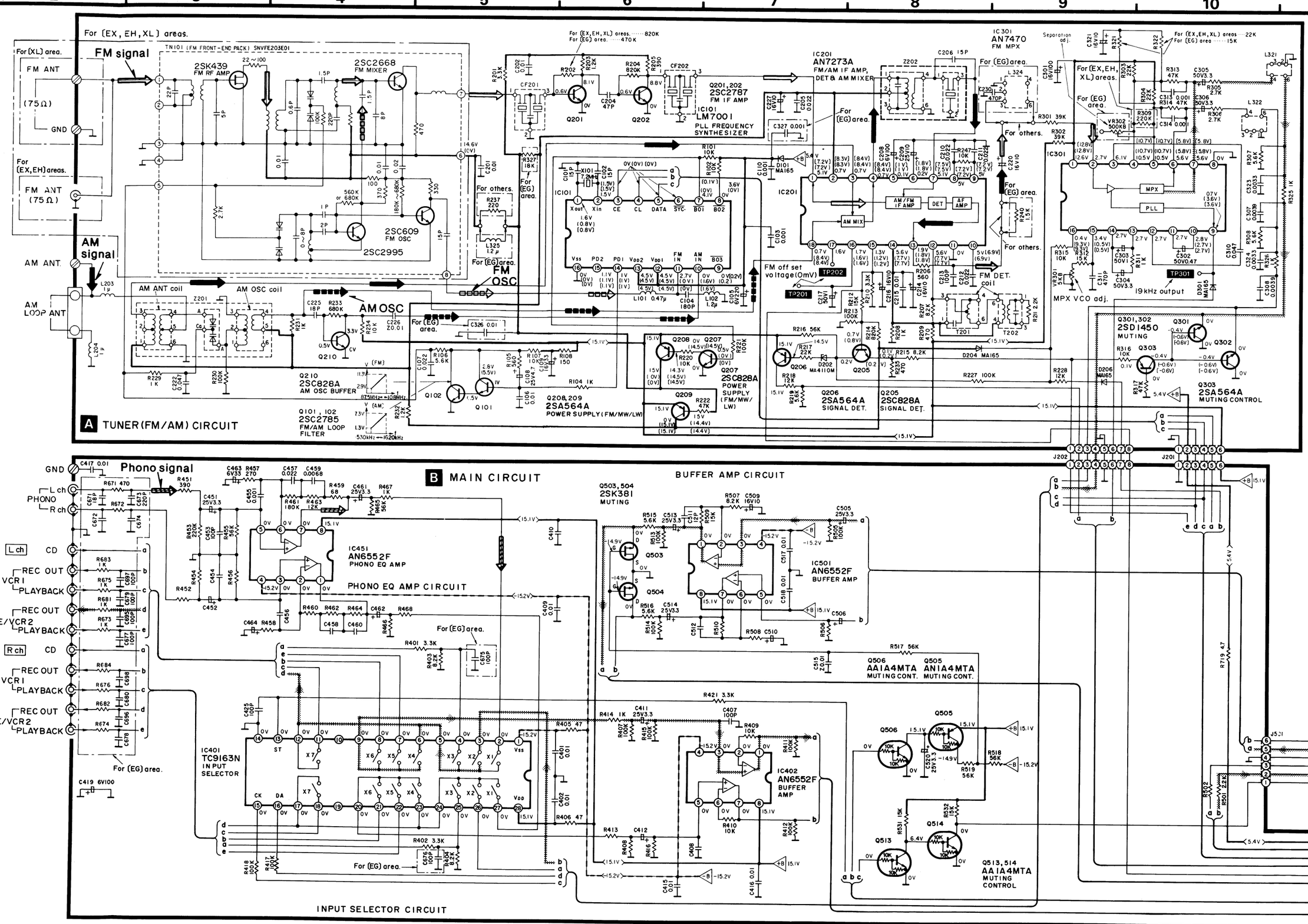



| RANK (Color) | D914 | D915 | CENTER FREQUENCY |
|---|---|---|---|
| Black | ○ | × | 10.65MHz |
| Red | × | × | 10.70MHz |
| White | × | ○ | 10.75MHz |

Note: ○ mark: Diode is used.
× mark: Diode is not used.




A TUNER (FM/AM) CIRCUIT
B MAIN CIRCUIT
INPUT SELECTOR CIRCUIT
BUFFER AMP CIRCUIT
PHONO EQ AMP CIRCUIT
FM signal
AM signal
Phono signal
TN101 (FM FRONT-END PACK) SNVFE203E01
2SK439 FM RF AMP
2SC2668 FM MIXER
2SC609 FM OSC
2SC2995
IC101 LM7001 PLL FREQUENCY SYNTHESIZER
IC201 AN7273A FM/AM IF AMP, DET & AM MIXER
IC301 AN7470 FM MPX
Q201,202 2SC2787 FM IF AMP
Q210 2SC828A AM OSC BUFFER
Q101,102 2SC2785 FM/AM LOOP FILTER
Q208,209 2SA564A POWER SUPPLY (FM/MW/LW)
Q207 2SC828A POWER SUPPLY (FM/MW/LW)
Q206 2SA564A SIGNAL DET.
Q205 2SC828A SIGNAL DET.
Q301,302 2SD1450 MUTING
Q303 2SA564A MUTING CONTROL
Q503,504 2SK381 MUTING
IC451 AN6552F PHONO EQ AMP
IC501 AN6552F BUFFER AMP
IC401 TC9163N INPUT SELECTOR
IC402 AN6552F BUFFER AMP
Q506 AA1A4MTA MUTING CONT.
Q505 AN1A4MTA MUTING CONT.
Q513,514 AA1A4MTA MUTING CONTROL
FM OSC
AM OSC
AM ANT coil
AM OSC coil
FM DET. coil
FM off set voltage (0mV)
TP202
TP201
TP301
19kHz output
MPX VCO adj.
Separation adj.
For (EX,EH,XL) areas.
For (EX,EH) areas.
For (XL) area.
For (EG) area.
For others.
FM ANT (75Ω)
AM ANT.
AM LOOP ANT
GND
L ch
R ch
PHONO
CD
REC OUT
PLAYBACK
VCR1
VCR2
For (EG) area.

SYSTEM CONTROL/FL DRIVE CIRCUIT

FL901 SAD8MT38GK

FL DISPLAY

Q901
2SC828A
SWITCHING
(RESET)

IC901
LC6554H3682
MICRO COMPUTER

Q902
AA1A4ZTA
FL DRIVE

Z901 (330P x 12)

Z902 (47K x 7)

Z903 (10K x 4)

Z904 (10K x 7)

CF901 4MHz

D901~905,908~911 RVD1SS133

D906,907 RVD1SS133

D914,915,916 RVD1SS133

D920 RVD1SS133

D921 RVD1SS133

"loudness on": 2.6V

"key: on" 3.8V

10V/1msec.div.

2V/1msec.div.

C BALANCE VR. CIRCUIT

VR502 (BALANCE) 100KG

D VOLUME CIRCUIT

VR501-2(VOLUME)

VR501-1 100KB

Q501, 502
2SJ40CD
MUTING

E FL METER DRIVE/
GRAPHIC EQUALIZER AMP CIRCUIT

F OPERATION SWITCH CIRCUIT

(down) (up) (select) (assort) (change)
(FM) (MW) (LW) (FM mode) (loudness)
(9) (0) (memory) (M.scan)
(5/clear) (6/enter) (7) (8) (monitor) (VCR1)
(1) (2) (3/DIGIT) (4/end) (PHONO) (TUNER) (CD)

G LED CIRCUIT

D291~293
SVGLB74UR3HL
(SIGNAL STRENGTH IND.)

Q291
2SC1685
LED DRIVE

GRAPHIC EQUALIZER AMP CIRCUIT

IC552
M5226P
B.P.FILTER AMP
(R ch)

IC551
M5226P
B.P.FILTER AMP
(L ch)

D552 MA4030M

D551 MA4030M

(80Hz) (250Hz) (1kHz) (4kHz)

22 23 24 25 26 27 28 29 30 31

## GRAPHIC EQUALIZER AMP CIRCUIT

IC552 M5226P B.P.FILTER AMP (R ch)

IC551 M5226P B.P.FILTER AMP (L ch)

B.P.F. signal

## POWER AMP CIRCUIT

IC601 SV13102B POWER AMP

Q701 2SD1762 REGULATOR

Q703 2SC1685 REGULATOR

Q704 2SC828 STABILIZER

Q705 2SC1384 REGULATOR

Q707 2SC828 STABILIZER

Q710 2SB1185 REGULATOR

Q708 2SB1185 REGULATOR

Q709 2SC1685 STABILIZER

## POWER SOURCE CIRCUIT

D701~704 SVDS2V20

S702 (SPEAKER IMPEDANCE) 4Ω ⟷ 8Ω

R624 22K

J601 J602 J701

SPEAKERS MAIN Lch Rch REMOTE Lch Rch

S601-1 (MAIN) S601-2 (REMOTE)

R620 1W330 R619 1W330 HEADPHONES

## H SPEAKER SWITCH/ HEADPHONES JACK CIRCUIT

For (EG) area. L791 L792 AC 220V (50/60Hz)

## FM TUNER CIRCUIT

TN101 (FM FRONT END PACK) SNVFE337G01

FM ANT (75Ω) Z321

2SK193 FM RF AMP 2SC2668 FM MIXER

2SC2669 FM OSC 2SC2995

## J POWER SOURCE CIRCUIT

F1 For (EX,EG,EH) areas·····T800mA For (XL)area···T630mA

T701

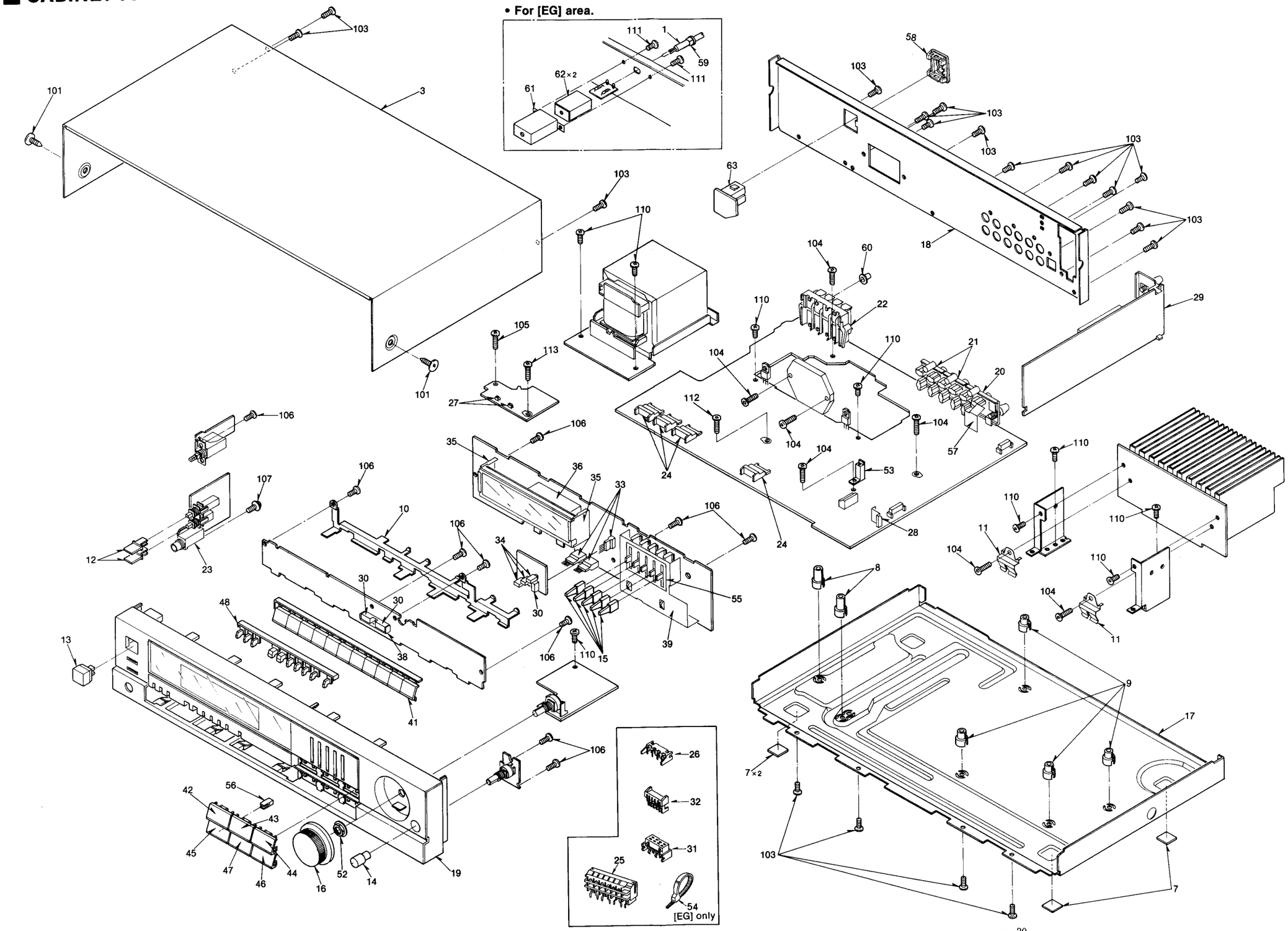
AC20.7V AC20.7V AC28.5V AC28.5V R917 1/2W5.6 AC6.0V R918 1/2W5.6

## I POWER SWITCH CIRCUIT

C791 0.01 S701 (POWER)

AC 220V----(EX,EH) AC240V----(XL) (50/60Hz)

## ■ CABINET PARTS LOCATION








## ■ REPLACEME

**Notes :** * Important safety noti
Components identifi
manufacturer's spec
* Bracketed indication
Parts without these
* ⚠ Indicates parts th

| Ref. No. | | Part No. |
|---|---|---|
| CABINET AND CHASSIS | | |
| 1 | ⚠ | SJA139-3 |
| (EG) | | |
| 3 | | SKC1741K991 |
| 7 | | SHS3276 |
| 8 | | SHE181S |
| 9 | | SHE185-1S |
| 10 | | SUW3121S |
| 11 | | SUS894S |
| 12 | | SBC315S |
| 13 | | SBC666-5 |
| 14 | | SBDM10ZK0AS |
| 15 | | SBN150 |
| 16 | | SBN1244 |
| 17 | | SKUA160-KM |
| 18 | | SGPA160-KEH |
| (EH) | | |
| 18 | | SGP7410-7A |
| (EX) | | |
| 18 | | SGP7410-7D |
| (XL) | | |
| 18 | | SGP7410-9A |
| (EG) | | |
| 19 | | SGYA160-KE |
| 20 | | SJF3070NJ |
| 21 | | SJF3071NJ |
| 22 | | SJF5813 |
| (EH, EX, XL) | | |
| 22 | | SJF5813-1 |
| (EG) | | |
| 23 | | SJJ134B |
| 24 | | SJS50680WL |
| 24 | | SJS50880WL |
| 25 | | SJT30640LX-V |
| 26 | | SJT30645JQ |
| 26 | | SJT30845JQ |
| 27 | ⚠ | SJT390 |
| 28 | | SME103-5S |
| 29 | | SJF8305N |
| (EG, EH, EX) | | |
| 29 | | SJF8402N |
| (XL) | | |
| 30 | | SJS50581BB |
| 30 | | SJS50681BB |
| 30 | | SJS50781BB |
| 31 | | SJS50678JQ |
| 31 | | SJS50878JQ |
| 32 | | SJT30647WL |
| 32 | | SJT30847WL |

| Ref. No. | Part No. |
|---|---|
| PACKING MATERIAL | |
| P1 | SPG6414 |
| (EG, EH, EX) | |
| P1 | SPG6415 |
| (XL) | |
| P2 | SPS5172 |
| P3 | SPS5173 |
| P4 | SPP699 |
| ACCESSORIES | |
| A1 | SPB1161 |
| A2 | SMA233-1 |
| A3 | XTN3+10AFZ |

# ■ REPLACEMENT PARTS LIST

**Notes :** * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.
* Ⓜ Indicates parts that are supplied by **MESA.**

| Ref. No. | Part No. | Description |
|---|---|---|
| **CABINET AND CHASSIS** | | |
| 1 ⚠ (EG) | SJA139-3 | POWER CORD |
| 3 | SKC1741K991 | CABINET BODY Ⓜ |
| 7 | SHS3276 | FOOT (MESA) Ⓜ |
| 8 | SHE181S | SUPPORTER Ⓜ |
| 9 | SHE185-1S | SUPPORTER Ⓜ |
| 10 | SUW3121S | ANGULE Ⓜ |
| 11 | SUS894S | SPRING Ⓜ |
| 12 | SBC315S | BUTTON Ⓜ |
| 13 | SBC666-5 | BUTTON |
| 14 | SBDM10ZK0AS | KNOB Ⓜ |
| 15 | SBN150 | KNOB Ⓜ |
| 16 | SBN1244 | KNOB |
| 17 | SKUA160-KM | BOTTOM BOARD Ⓜ |
| 18 (EH) | SGPA160-KEH | REAR PANEL Ⓜ |
| 18 (EX) | SGP7410-7A | REAR PANEL Ⓜ |
| 18 (XL) | SGP7410-7D | REAR PANEL Ⓜ |
| 18 (EG) | SGP7410-9A | REAR PANEL Ⓜ |
| 19 | SGYA160-KE | FRONT PANEL Ⓜ |
| 20 | SJF3070NJ | TERMINAL |
| 21 | SJF3071NJ | TERMINAL |
| 22 (EH, EX, XL) | SJF5813 | TERMINAL BOARD |
| 22 (EG) | SJF5813-1 | TERMINAL BOARD Ⓜ |
| 23 | SJJ134B | JACK |
| 24 | SJS50680WL | SOCKET(6P) |
| 24 | SJS50880WL | SOCKET(8P) |
| 25 | SJT30640LX-V | CONNECTOR(6P) |
| 26 | SJT30645JQ | CONNECTOR(6P) |
| 26 | SJT30845JQ | CONNECTOR |
| 27 ⚠ | SJT390 | FUSE HOLDER |
| 28 | SME103-5S | ANGLE |
| 29 (EG, EH, EX) | SJF8305N | TERMINAL BOARD |
| 29 (XL) | SJF8402N | TERMINAL PLATE |
| 30 | SJS50581BB | SOCKET(5P) |
| 30 | SJS50681BB | SOCKET(6P) |
| 30 | SJS50781BB | SOCKET(7P) |
| 31 | SJS50678JQ | SOCKET(6P) |
| 31 | SJS50878JQ | SOCKET(8P) |
| 32 | SJT30647WL | CONNECTOR(6P) |
| 32 | SJT30847WL | CONNECTOR(8P) |
| 33 | SJT30549BB | CONNECTOR(5P) |
| 33 | SJT30648BB | CONNECTOR(6P) |
| 33 | SJT30748BB | CONNECTOR(7P) |
| 34 | SHR9865S | ORNAMENT Ⓜ |
| 35 | SUW3122S | ANGULE Ⓜ |
| 36 | SUW3123S | ANGULE Ⓜ |
| 38 | SMC6466S | SHIELD PLATE Ⓜ |
| 39 | SMC6467 | SHIELD PLATE Ⓜ |
| 41 | SBC1033AS | BUTTON Ⓜ |
| 42 | SBC1034AS | BUTTON Ⓜ |
| 43 | SBC1034BS | BUTTON Ⓜ |
| 44 | SBC1034CS | BUTTON Ⓜ |
| 45 | SBC1035S | BUTTON Ⓜ |
| 46 | SBC1035BS | BUTTON Ⓜ |
| 47 | SBC1035DS | BUTTON Ⓜ |
| 48 | SBC1036S | BUTTON Ⓜ |
| 52 | SNE4021 | NUT |
| 53 | SUW3128S | ANGULE Ⓜ |
| 54 (EG) | SHR301 | CLAMPER |
| 55 | SHR5353 | ORNAMENT Ⓜ |
| 56 | SHR9866 | SPACER |
| 57 | SMC6471S | SHIELD PLATE |
| 58 (EH, EX) | SJS9231A | AC INLET COVER |
| 58 (XL) | SJS9234A | AC INLET COVER |
| 59 (EG) | SHR127 | SPACER, POWER CORD |
| 60 | SBC165 | BUTTON, IMPEDANCE |
| 61 (EG) | SMC1200 | SHIELD COVER |
| 62 (EG) | SMX891 | SHIELD SPACER |
| 63 ⚠ (EH, EX) | SJS9231-1B | AC INLET |
| 63 ⚠ (XL) | SJS9234B | AC INLET |
| **SCREWS,WASHERS AND NUTS** | | |
| 101 | SNE2129-3 | SCREW |
| 103 | XTBS3+8JFZ1 | SCREW |
| 104 | XTB3+16J | SCREW |
| 105 | XTB3+20J | SCREW |
| 106 | XTB3+8G | SCREW |
| 107 | XTWS3+8T | SCREW |
| 110 | XTB3+8J | SCREW |
| 111 (EG) | XTBS3+8JFZ1 | SCREW |
| 112 | XTBS3+16F1 | SCREW |
| 113 | XTBS3+20F1 | SCREW |

| Ref. No. | Part No. | Description |
|---|---|---|
| **PACKING MATERIAL** | | |
| P1 (EG, EH, EX) | SPG6414 | CARTON BOX Ⓜ |
| P1 (XL) | SPG6415 | CARTON BOX Ⓜ |
| P2 | SPS5172 | PAD Ⓜ |
| P3 | SPS5173 | PAD Ⓜ |
| P4 | SPP699 | POLYETHYLENE SHEET |
| **ACCESSORIES** | | |
| A1 | SPB1161 | AM LOOP ANT Ⓜ |
| A2 | SMA233-1 | ANTENNA HOLDER |
| A3 | XTN3+10AFZ | SCREW |
| A4 | SMA231 | HOLDER |
| A5 (XL) | SSA269M | FM ANTENNA |
| A5 (EG, EH, EX) | SSA270M | FM ANTENNA |
| A7 (EH, EX) | SQF13352 | INSTRUCTION MANUAL Ⓜ |
| A7 (XL) | SQF13356 | INSTRUCTION MANUAL Ⓜ |
| A7 (EG) | SQF13359 | INSTRUCTION MANUAL Ⓜ |
| A8 ⚠ (EH, EX) | SFDAC05E03 | POWER CORD |
| A8 ⚠ (XL) | SJA173 | POWER CORD |



| Ref. No. | Part No. | Description |
|---|---|---|
| **INTEGRATED CIRCUITS** | | |
| IC101 | LM7001 | I.C, PLL SYNTHESIZER |
| IC201 | AN7273B | I.C, FM/AM IF AMP |
| IC301 | SVIUPC1161C3 | I.C, FM MPX |
| IC401 | TC9163N | I.C, INPUT SELECTOR |
| IC402 | AN6552F | I.C, BUFFER AMP |
| IC451 | AN6552F | I.C, EQUALIZER AMP |
| IC501 | AN6552F | I.C, BUFFER AMP |
| IC551 | M5226P | I.C, B.P.F |
| IC552 | M5226P | I.C, B.P.F |
| IC601 | SVI3102B | I.C, POWER AMP |
| IC901 | LC6554H-3682 | I.C, MICRO-COMPU |
| **TRANSISTORS** | | |
| Q101 | 2SC2785FE | TRANSISTOR |
| Q102 | 2SC2785FE | TRANSISTOR |
| Q201 | 2SC2787L | TRANSISTOR |
| Q202 | 2SC2787L | TRANSISTOR |
| Q205 | 2SC828AQ | TRANSISTOR |
| Q206 | 2SA1127-S | TRANSISTOR, SI |
| Q207 | 2SC828AQ | TRANSISTOR |
| Q208 | 2SA1127-S | TRANSISTOR, SI |
| Q209 | 2SA1127-S | TRANSISTOR, SI |
| Q210 | 2SC828AQ | TRANSISTOR |
| Q291 | 2SC1685RST | TRANSISTOR |
| Q301 | 2SD1450RST | TRANSISTOR |
| Q302 | 2SD1450RST | TRANSISTOR |
| Q303 | 2SA1127-S | TRANSISTOR, SI |
| Q501 | 2SJ40CD | TRANSISTOR |
| Q502 | 2SJ40CD | TRANSISTOR |
| Q503 | 2SK381 | TRANSISTOR |
| Q504 | 2SK381 | TRANSISTOR |
| Q505 | AN1A4MTA | TRANSISTOR Ⓜ |
| Q506 | AA1A4MTA | TRANSISTOR Ⓜ |
| Q513 | AA1A4MTA | TRANSISTOR Ⓜ |
| Q514 | AA1A4MTA | TRANSISTOR Ⓜ |
| Q701 | 2SD1762DEF | TRANSISTOR |
| Q703 | 2SC1685RST | TRANSISTOR |
| Q704 | 2SC828AQ | TRANSISTOR |
| Q707 | 2SC828AQ | TRANSISTOR |
| Q708 | 2SB1185DEF | TRANSISTOR |
| Q709 | 2SC1685RST | TRANSISTOR |
| Q710 | 2SB1185DEF | TRANSISTOR |
| Q901 | 2SC828AQ | TRANSISTOR |
| Q902 | AA1A4ZTA | TRANSISTOR Ⓜ |
| **DIODES** | | |
| D101 | 1SS133 | DIODE |
| D202 | MA4110M | DIODE |
| D204 | 1SS133 | DIODE |
| D206 | 1SS133 | DIODE |
| D291 | SVGLB74UR3HL | L.E.D |
| D292 | SVGLB74UR3HL | L.E.D |
| D293 | SVGLB74UR3HL | L.E.D |
| D301 | 1SS133 | DIODE |
| D551 | MA4030M | DIODE |
| D552 | MA4030M | DIODE |
| D701 ⚠ | SVDS2V20 | RECTIFIER |
| D702 ⚠ | SVDS2V20 | RECTIFIER |
| D703 ⚠ | SVDS2V20 | RECTIFIER |
| D704 ⚠ | SVDS2V20 | RECTIFIER |
| D705 | MA4062M | DIODE |
| D706 | MTZ6R8B | DIODE |
| D707 | 1SS133 | DIODE |
| D708 | MA167 | DIODE |
| D709 | MTZ30BT77 | DIODE Ⓜ |
| D710 | MA29WA | DIODE |
| D711 | MTZ15BT77 | DIODE (MESA) Ⓜ |
| D781 ⚠ | SVD1SR35200A | DIODE |
| D901 | 1SS133 | DIODE |
| D902 | 1SS133 | DIODE |
| D903 | 1SS133 | DIODE |
| D904 | 1SS133 | DIODE |
| D905 | 1SS133 | DIODE |
| D906 | 1SS133 | DIODE |
| D907 | 1SS133 | DIODE |
| D908 | 1SS133 | DIODE |
| D909 | 1SS133 | DIODE |
| D910 | 1SS133 | DIODE |
| D911 | 1SS133 | DIODE |
| D912 | MA4056-M | DIODE |
| D914 | 1SS133 | DIODE |
| D916 | 1SS133 | DIODE |
| D921 | 1SS133 | DIODE |
| **VARIABLE RESISTORS** | | |
| VR301 | EVND4AA00B53 | V.R, MPX VCO |
| VR302 (EG) | EVND4AA00B55 | V.R, FM SEPARATION |
| VR501 | EWCXUAF20B15 | V.R, VOLUME |
| VR502 | EWHFDAF25G15 | V.R, BALANCE |
| VR552 | EWAGQ3X0AG15 | V.R, G.E 80HZ Ⓜ |
| VR553 | EWAGQ3X0AG15 | V.R, G.E 250HZ Ⓜ |
| VR554 | EWAGQ3X0AG15 | V.R, G.E 1KHZ Ⓜ |
| VR555 | EWAGQ3X0AG15 | V.R, G.E 4KHZ Ⓜ |
| VR556 | EWAGQ3X0AG15 | V.R, G.E 12.5KHZ Ⓜ |
| **COILS AND TRANSFORMERS** | | |
| L101 | RLQZPR47MT-Y | COIL |
| L102 | RLQZP1R2MT-Y | COIL Ⓜ |
| L203 | ELEPK1R0MA | COIL |
| L204 | ELEPK1R0MA | COIL |
| L321 | SLM1B9-P | MPX COIL |
| L322 | SLM1B9-P | MPX COIL |
| L324 (EG) | SLM1B10-M | COIL |
| L325 (EG) | RLQZP1R2MT-Y | COIL Ⓜ |
| L601 (EG) | SLQY07G-40 | CHOKE COIL |
| L602 (EG) | SLQY07G-40 | CHOKE COIL |
| L791 ⚠ (EG) | SLQX400-D | COIL |
| L792 ⚠ (EG) | SLQX400-D | COIL |
| L901 | RLQZP1R2MT-Y | COIL Ⓜ |
| L902 | RLQZP101KT-Y | COIL |
| T701 ⚠ (EG, EH, EX) | SLT5M543 | POWER TRANSFORMER Ⓜ |
| T701 ⚠ (XL) | SLT5M544 | POWER TRANSFORMER Ⓜ |
| T201 | SLI4B511-Z | I.F.TRANSFORMER |
| T202 | SLI4B513-Z | I.F.TRANSFORMER |
| **COMPONENT COMBINATIONS** | | |
| Z201 | SLA2Z1-T | COIL |
| Z202 | SLI7Z101-T | I.F.TRANSFORMER |
| Z321 (EG) | SLA4Z13-Z | ANTENNA COIL |
| Z901 | EXFP12331MF | COMPONENT COMBINATION |
| Z902 | EXBP87473JR | COMBINATION PART Ⓜ |
| Z903 | EXBP84103J | COMBINATION PART |
| Z904 | EXBP87103J-R | COMPONENT CONBINATION |
| **FILTERS** | | |
| CF201 (EH, EX, XL) | SVFE107MS8A | CERAMIC FILTER (RED) |
| CF201 (EH, EX, XL) | SVFE107MS8D | CERAMIC FILTER (BLACK) |
| CF201 (EH, EX, XL) | SVFE107MS8E | CERAMIC FILTER (WHITE) |

| Ref. No. | Part No. | Description |
|---|---|---|
| CF201 (EG) | SVFE107MZ-A | CERAMIC FILTER |
| CF201 (EG) | SVFE107MZ-D | CERAMIC FILTER |
| CF201 (EG) | SVFE107MZ-E | CERAMIC FILTER |
| CF202 (EG) | SVFE107MM-Q | CERAMIC FILTER |
| CF202 (EH, EX, XL) | SVFE107MS8A | CERAMIC FILTER (RED) |
| CF202 (EH, EX, XL) | SVFE107MS8D | CERAMIC FILTER (BLACK) |
| CF202 (EH, EX, XL) | SVFE107MS8E | CERAMIC FILTER (WHITE) |
| CF901 | EF0FC4004A4 | CERAMIC FILTER |
| OSCILLATORS | | |
| X101 | SVQ49U722-S | CRYSTAL OSCILLATOR |
| DISPLAYS | | |
| FL901 | SAD8MT38GK | DISPLAY TUBE M |
| FRONT PACKS | | |
| TN101 (EH, EX, XL) | SNVFE203E01 | FM FRONT-END PACK |
| TN101 (EG) | SNVFE337G01 | TUNER PACK |
| FUSES | | |
| F1 ⚠ (XL) | XBA2C06TB0 | FUSE 250V, T600mA |
| F1 ⚠ | XBA2C08TB0 | FUSE 250V, T800mA |

| Ref. No. | Part No. | Description |
|---|---|---|
| (EG, EH, EX) | | |
| SWITCHES | | |
| S1 | SSG13 | SW, (1) |
| S2 | SSG13 | SW, (2) |
| S3 | SSG13 | SW, (3) |
| S4 | SSG13 | SW, (4) |
| S5 | SSG13 | SW, (5) |
| S6 | SSG13 | SW, (6) |
| S7 | SSG13 | SW, (7) |
| S8 | SSG13 | SW, (8) |
| S9 | SSG13 | SW, (9) |
| S10 | SSG13 | SW, (0) |
| S11 | SSG13 | SW, SCAN |
| S12 | SSG13 | SW, FM MODE |
| S13 | SSG13 | SW, FM |
| S14 | SSG13 | SW, AM |
| S16 | SSG13 | SW, DOWN |
| S17 | SSG13 | SW, UP |
| S18 | SSG13 | SW, CHANGE-MODE |
| S19 | SSG13 | SW, ASSORT-MODE |
| S20 | SSG13 | SW, SELECT |
| S21 | SSG13 | SW, MEMORY |
| S22 | SSG13 | SW, LOUDNESS |
| S23 | SSG13 | SW, PHONO |
| S24 | SSG13 | SW, TUNER |
| S25 | SSG13 | SW, CD |
| S26 | SSG13 | SW, VCR 1 |
| S27 | SSG13 | SW, TAPE/VCR |
| S601 | SSH2137 | SW, SPEAKER |
| S701 ⚠ | SSH1071 | SW, POWER |
| S702 ⚠ | SSH1193 | SW, IMPEDANCE |



# ■ RESISTORS & CAPACITORS

**Notes :** * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

### Numbering System For Resistors

**Example:**

| ERD | 25 | F | J | 102 |
|---|---|---|---|---|
| Type | Wattage (1/4W) | Shape | Tolerance | Value (1KΩ) |
| ERX | 2 | AN | J | 471 |
| Type | Wattage (2W) | Shape | Tolerance | Value (470Ω) |

### Numbering System For Capacitors

**Example:**

| ECKD | 1H | 102 | Z | F |
|---|---|---|---|---|
| Type | Voltage (50V) | Value (0.001μF) | Tolerance | Unique |
| ECEA | 50 | M | | 330 |
| Type | Voltage (50V) | Characteristics | | Value (33μF) |

- Capacitance values is in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
- Resistance values is in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

| Resistor Type | | Wattage | | Tolerance |
|---|---|---|---|---|
| ERD | : Carbon | 10 : 1/8W | 12 : 1/2W | J : ±5% |
| ERG | : Metal Oxide | 14 : 1/4W | 25 : 1/4W | F : ±1% |
| ERQ | : Fuse Type Metal | 1A : 1W | 18 : 1/8W | G : ±2% |
| ERX | : Metal Film | S2 : 1/4W | S1 : 1/2W | J : ±5% |
| ERD L | : Carbon (chip) | 2F : 1/4W | 50 : 1/2W | K : ±10% |
| ERO K | : Metal Film (chip) | 2A : 2W | 3A : 3W | M : ±20% |
| ERC | : Solid | 6G : 1/10W | 8G : 1/8W | |
| ERF | : Incombustible Box-Shaped | | | |
| ERM | : Wire-Wound | | | |
| RRJ | : Chip Resistor | | | |
| ERJ | : Chip Resistor | | | |

| Capacitor Type | | Voltage | | Tolerance |
|---|---|---|---|---|
| ECE | : Electrolytic | 0J : 6.3V | 1A : 10V | K : ±10% |
| ECCD | : Ceramic | 1C : 16V | 1E : 25V | M : ±20% |
| ECKD | : Ceramic Capacitor | 1H : 50V | 1V : 35V | Z : +80 % −20 |
| ECQM | : Polyester | 50 : 50V | 05 : 50V | J : ±5% |
| ECQP | : Polypropylene | 2H : 500V | 2A : 100V | G : ±2% |
| ECG | : Ceramic | 1 : 100V | 1J : 63V | F : ±1% |
| ECEA N | : Non Polar Electrolytic | KC : 400V AC | | C : ±0.25pF |
| QCU | : Ceramic (Chip Type) | KC : 125V AC | | D : ±0.5pF |
| ECUX | : Ceramic (Chip Type) | (UL) | | |
| ECF | : Semiconductor | | | |
| EECW | : Liquid electrolyte double layer capacitor | | | |

| Ref. No. | Part No. | Value. |
|---|---|---|
| RESISTORS(VALUE,WATTAGE) | | |
| R101 | ERDS2TJ103 | 10K 1/4 |
| R102 | ERDS2TJ103 | 10K 1/4 |
| R104 | ERDS2TJ102 | 1K 1/4 |
| R105 | ERDS2TJ561 | 560 1/4 |
| R106 | ERDS2TJ562 | 5.6K 1/4 |
| R107 | ERDS2TJ103 | 10K 1/4 |
| R108 | ERDS2TJ151 | 150 1/4 |
| R201 | ERDS2TJ332 | 3.3K 1/4 |
| R202 | ERDS2TJ474 | 470K 1/4 |
| (EG) | | |
| R202 | ERDS2TJ824 | 820K 1/4 |
| R202 | ERDS2TJ824 | 820K 1/4 |
| (EH, EX, XL) | | |
| R203 | ERDS2TJ122 | 1.2K 1/4 |
| R204 | ERDS2TJ824 | 820K 1/4 |
| R205 | ERDS2TJ391 | 390 1/4 |
| R206 | ERDS2TJ561 | 560 1/4 |
| R207 | ERDS2TJ822 | 8.2K 1/4 |
| R208 | ERDS2TJ102 | 1K 1/4 |
| R209 | ERDS2TJ471 | 470 1/4 |
| R210 | ERDS2TJ332 | 3.3K 1/4 |
| R211 | ERDS2TJ222 | 2.2K 1/4 |
| R212 | ERDS2TJ153 | 15K 1/4 |
| R213 | ERDS2TJ104 | 100K 1/4 |
| R214 | ERDS2TJ824 | 820K 1/4 |
| R215 | ERDS2TJ822 | 8.2K 1/4 |
| R216 | ERDS2TJ563 | 56K 1/4 |
| R217 | ERDS2TJ223 | 22K 1/4 |
| R218 | ERDS2TJ123 | 12K 1/4 |
| R219 | ERDS2TJ562 | 5.6K 1/4 |
| R220 | ERDS2TJ103 | 10K 1/4 |
| R221 | ERDS2TJ104 | 100K 1/4 |
| R222 | ERDS2TJ473 | 47K 1/4 |
| R227 | ERDS2TJ104 | 100K 1/4 |
| R228 | ERDS2TJ123 | 12K 1/4 |
| R229 | ERDS2TJ102 | 1K 1/4 |
| R230 | ERDS2TJ104 | 100K 1/4 |
| R231 | ERDS2TJ102 | 1K 1/4 |
| R232 | ERDS2TJ122 | 1.2K 1/4 |
| R233 | ERDS2TJ684 | 680K 1/4 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| R234 | ERDS2TJ103 | 10K 1/4 |
| R235 | ERDS2TJ471 | 470 1/4 |
| R240 | ERDS2TJ152 | 1.5K 1/4 |
| (EG) | | |
| R247 | ERDS2TJ103 | 10K 1/4 |
| R257 | ERDS2TJ221 | 220 1/4 |
| (EX, EH, XL) | | |
| R291 | ERDS2TJ182 | 1.8K 1/4 |
| R292 | ERDS2TJ563 | 56K 1/4 |
| R293 | ERDS2TJ122 | 1.2K 1/4 |
| R294 | ERDS2TJ102 | 1K 1/4 |
| R295 | ERDS2TJ561 | 560 1/4 |
| R296 | ERDS2TJ821 | 820 1/4 |
| R297 | ERDS2TJ331 | 330 1/4 |
| R301 | ERDS2TJ393 | 39K 1/4 |
| R302 | ERDS2TJ151 | 150 1/4 |
| R303 | ERDS2TJ223 | 22K 1/4 |
| R304 | ERDS2TJ223 | 22K 1/4 |
| R305 | ERDS2TJ272 | 2.7K 1/4 |
| R306 | ERDS2TJ272 | 2.7K 1/4 |
| R307 | ERDS2TJ562 | 5.6K 1/4 |
| R308 | ERDS2TJ562 | 5.6K 1/4 |
| R309 | ERDS2TJ224 | 220K 1/4 |
| (EH, EX, XL) | | |
| R311 | ERDS2TJ102 | 1K 1/4 |
| R312 | ERDS2TJ153 | 15K 1/4 |
| R313 | ERDS2TJ473 | 47K 1/4 |
| R314 | ERDS2TJ473 | 47K 1/4 |
| R315 | ERDS2TJ103 | 10K 1/4 |
| R316 | ERDS2TJ103 | 10K 1/4 |
| R317 | ERDS2TJ473 | 47K 1/4 |
| R321 | ERDS2TJ153 | 15K 1/4 |
| (EG) | | |
| R321 | ERDS2TJ223 | 22K 1/4 |
| (EG) | | |
| R322 | ERDS2TJ153 | 15K 1/4 |
| (EG) | | |
| R322 | ERDS2TJ223 | 22K 1/4 |
| (EG) | | |
| R325 | ERDS2TJ102 | 1K 1/4 |
| R326 | ERDS2TJ102 | 1K 1/4 |
| R327 | ERDS2TJ183 | 18K 1/4 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| (EG) | | |
| R401 | ERDS2TJ332 | 3.3K 1/4 |
| R402 | ERDS2TJ332 | 3.3K 1/4 |
| R403 | ERDS2TJ822 | 8.2K 1/4 |
| R404 | ERDS2TJ822 | 8.2K 1/4 |
| R405 | ERDS2TJ470 | 47 1/4 |
| R406 | ERDS2TJ470 | 47 1/4 |
| R407 | ERDS2TJ104 | 100K 1/4 |
| R408 | ERDS2TJ104 | 100K 1/4 |
| R409 | ERDS2TJ103 | 10K 1/4 |
| R410 | ERDS2TJ103 | 10K 1/4 |
| R411 | ERDS2TJ104 | 100K 1/4 |
| R412 | ERDS2TJ104 | 100K 1/4 |
| R413 | ERDS2TJ102 | 1K 1/4 |
| R414 | ERDS2TJ102 | 1K 1/4 |
| R415 | ERDS2TJ104 | 100K 1/4 |
| R416 | ERDS2TJ104 | 100K 1/4 |
| R417 | ERDS2TJ104 | 100K 1/4 |
| R418 | ERDS2TJ104 | 100K 1/4 |
| R421 | ERDS2TJ332 | 3.3K 1/4 |
| R451 | ERDS2TJ391 | 390 1/4 |
| R452 | ERDS2TJ391 | 390 1/4 |
| R453 | ERDS2TJ224 | 220K 1/4 |
| R454 | ERDS2TJ224 | 220K 1/4 |
| R455 | ERDS2TJ563 | 56K 1/4 |
| R456 | ERDS2TJ563 | 56K 1/4 |
| R457 | ERDS2TJ271 | 270 1/4 |
| R458 | ERDS2TJ271 | 270 1/4 |
| R459 | ERDS2TJ680 | 68 1/4 |
| R460 | ERDS2TJ680 | 68 1/4 |
| R461 | ERDS2TJ184 | 180K 1/4 |
| R462 | ERDS2TJ184 | 180K 1/4 |
| R463 | ERDS2TJ123 | 12K 1/4 |
| R464 | ERDS2TJ123 | 12K 1/4 |
| R465 | ERDS2TJ563 | 56K 1/4 |
| R466 | ERDS2TJ563 | 56K 1/4 |
| R467 | ERDS2TJ102 | 1K 1/4 |
| R468 | ERDS2TJ102 | 1K 1/4 |
| R501 | ERDS2TJ222 | 2.2K 1/4 |
| R502 | ERDS2TJ222 | 2.2K 1/4 |
| R503 | ERDS2TJ103 | 10K 1/4 |
| R504 | ERDS2TJ103 | 10K 1/4 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| R505 | ERDS2TJ104 | 100K 1/4 |
| R506 | ERDS2TJ104 | 100K 1/4 |
| R507 | ERDS2TJ822 | 8.2K 1/4 |
| R508 | ERDS2TJ822 | 8.2K 1/4 |
| R509 | ERDS2TJ153 | 15K 1/4 |
| R510 | ERDS2TJ153 | 15K 1/4 |
| R513 | ERDS2TJ104 | 100K 1/4 |
| R514 | ERDS2TJ104 | 100K 1/4 |
| R515 | ERDS2TJ562 | 5.6K 1/4 |
| R516 | ERDS2TJ562 | 5.6K 1/4 |
| R517 | ERDS2TJ563 | 56K 1/4 |
| R518 | ERDS2TJ563 | 56K 1/4 |
| R519 | ERDS2TJ563 | 56K 1/4 |
| R522 | ERDS2TJ223 | 22K 1/4 |
| R531 | ERDS2TJ153 | 15K 1/4 |
| R532 | ERDS2TJ153 | 15K 1/4 |
| R551 | ERDS2TJ103 | 10K 1/4 |
| R552 | ERDS2TJ103 | 10K 1/4 |
| R553 | ERDS2TJ472 | 4.7K 1/4 |
| R554 | ERDS2TJ472 | 4.7K 1/4 |
| R601 | ERDS2TJ222 | 2.2K 1/4 |
| R602 | ERDS2TJ222 | 2.2K 1/4 |
| R603 | ERDS2TJ563 | 56K 1/4 |
| R604 | ERDS2TJ563 | 56K 1/4 |
| R605 | ERDS2TJ102 | 1K 1/4 |
| R606 | ERDS2TJ102 | 1K 1/4 |
| R607 | ERDS2TJ563 | 56K 1/4 |
| R608 | ERDS2TJ563 | 56K 1/4 |
| R611 ⚠ | ERD25FJ100 | 10 1/4 |
| R612 ⚠ | ERD25FJ100 | 10 1/4 |
| R614 ⚠ | ERD25FJ470 | 47 1/4 |
| R619 ⚠ | ERG1ANJ331 | 330 1 |
| R620 ⚠ | ERG1ANJ331 | 330 1 |
| R623 | ERDS2TJ684 | 680K 1/4 |
| R624 | ERDS2TJ223 | 22K 1/4 |
| R627 | ERDS2TJ154 | 150K 1/4 |
| R628 | ERDS2TJ105 | 1M 1/4 |
| R671 (EG) | ERDS2TJ471 | 470 1/4 |
| R672 (EG) | ERDS2TJ471 | 470 1/4 |
| R673 (EG) | ERDS2TJ102 | 1K 1/4 |
| R674 (EG) | ERDS2TJ102 | 1K 1/4 |
| R675 (EG) | ERDS2TJ102 | 1K 1/4 |
| R676 (EG) | ERDS2TJ102 | 1K 1/4 |
| R681 (EG) | ERDS2TJ102 | 1K 1/4 |
| R682 (EG) | ERDS2TJ102 | 1K 1/4 |
| R683 (EG) | ERDS2TJ102 | 1K 1/4 |
| R684 (EG) | ERDS2TJ102 | 1K 1/4 |
| R701 ⚠ | ERDS1FJ332 | 3.3K 1/2 |
| R702 | ERDS2TJ122 | 1.2K 1/4 |
| R703 | ERDS2TJ272 | 2.7K 1/4 |
| R704 | ERDS2TJ222 | 2.2K 1/4 |
| R705 | ERDS2TJ272 | 2.7K 1/4 |
| R707 | ERDS2TJ1R2 | 1.2 1/4 |
| R708 ⚠ | ERD25FJ470 | 47 1/4 |
| R709 ⚠ | ERD25FJ470 | 47 1/4 |
| R710 | ERDS2TJ272 | 2.7K 1/4 |
| R711 | ERDS2TJ104 | 100K 1/4 |
| R712 | ERDS2TJ223 | 22K 1/4 |
| R713 | ERDS2TJ183 | 18K 1/4 |
| R715 | ERDS2TJ101 | 100 1/4 |
| R716 | ERDS2TJ222 | 2.2K 1/4 |
| R717 ⚠ | ERD25FJ150 | 15 1/4 |
| R719 | ERDS2TJ4R7 | 4.7 1/4 |
| R771 ⚠ | ERDS1FJ2R2 | 2.2 1/2 |
| R772 ⚠ | ERDS1FJ2R2 | 2.2 1/2 |
| R773 ⚠ | ERDS1FJ4R7 | 4.7 1/2 |
| R775 ⚠ | ERDS1FJ4R7 | 4.7 1/2 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| R777 ⚠ | ERD25FJ4R7 | 4.7 1/4 |
| R778 ⚠ | ERD25FJ4R7 | 4.7 1/4 |
| R779 ⚠ | ERDS1FJ121 | 120 1/2 |
| R781 ⚠ | ERDS1FJ121 | 120 1/2 |
| R785 ⚠ | ERDS1FJ2R2 | 2.2 1/2 |
| R901 | ERDS2TJ222 | 2.2K 1/4 |
| R903 | ERDS2TJ563 | 56K 1/4 |
| R904 | ERDS2TJ123 | 12K 1/4 |
| R905 | ERDS2TJ103 | 10K 1/4 |
| R906 | ERDS2TJ334 | 330K 1/4 |
| R907 | ERDS2TJ681 | 680 1/4 |
| R910 | ERDS2TJ562 | 5.6K 1/4 |
| R911 | ERDS2TJ103 | 10K 1/4 |
| R913 | ERDS2TJ101 | 100 1/4 |
| R914 | ERDS2TJ101 | 100 1/4 |
| R916 | ERDS2TJ104 | 100K 1/4 |
| R917 ⚠ | ERDS1FJ5R6 | 5.6 1/2 |
| R918 ⚠ | ERDS1FJ5R6 | 5.6 1/2 |
| R919 | ERDS2TJ122 | 1.2K 1/4 |
| R920 | ERDS2TJ122 | 1.2K 1/4 |
| R921 | ERDS2TJ103 | 10K 1/4 |
| R923 | ERDS2TJ331 | 330 1/4 |
| R924 | ERDS2TJ331 | 330 1/4 |
| R925 | ERDS2TJ331 | 330 1/4 |
| R999 | ERDS2TJ393 | 39K 1/4 |

CAPACITORS(VALUE,VOLTAGE)

| Ref. No. | Part No. | Value. |
|---|---|---|
| C101 | RCBS1H150JCY | 15P 50 |
| C102 | RCBS1H150JCY | 15P 50 |
| C103 | RCBS1H102KBY | 0.001 50 |
| C104 | RCBS1H181KBY | 180P 50 |
| C105 | ECEA0JS221 | 220 6.3 |
| C106 | ECKD1H103PF | 0.01 50 |
| C107 | ECKD1H223PF | 0.022 50 |
| C108 | ECEA25M4R7R | 4.7 25 |
| C109 | ECEA1CU330 | 33 16 |
| C110 | RCBS1H102KBY | 0.001 50 |
| C201 | ECKD1H103PF | 0.01 50 |
| C202 | ECKD1H103PF | 0.01 50 |
| C204 | RCBC1H470JLY | 47P 50 |
| C205 | ECKD1H223PF | 0.022 50 |
| C206 | RCBS1H150JCY | 15P 50 |
| C208 | ECEA0JU101 | 100 6.3 |
| C209 | ECEA1ES100 | 10 25 |
| C210 | ECKD1H223PF | 0.022 50 |
| C211 | ECKD1H223PF | 0.022 50 |
| C212 | ECKD1H223PF | 0.022 50 |
| C213 | RCBC1H101KBY | 100P 50 |
| C214 | ECEA1CU100 | 10 16 |
| C215 | ECKD1H103PF | 0.01 50 |
| C216 | ECEA1CU100 | 10 16 |
| C217 | ECEA1HU010 | 1 50 |
| C220 | ECEA1CU100 | 10 16 |
| C222 | ECQM1H473JZ | 0.047 50 |
| C225 | RCBS1H180JCY | 18P 50 |
| C226 | ECKD1H103PF | 0.01 50 |
| C227 | ECEA1CU100 | 10 16 |
| C230 (EG) | RCBC1H471KBY | 470P 50 |
| C291 | ECEA1HU3R3 | 3.3 50 |
| C301 | ECEA1CU101 | 100 16 |
| C302 | ECEA1HUR47 | 0.47 50 |
| C303 | ECEA1HU010 | 1 50 |
| C304 | ECEA1HU3R3 | 3.3 50 |
| C305 | ECEA1HU3R3 | 3.3 50 |
| C306 | ECEA1HU3R3 | 3.3 50 |
| C307 | ECFT1E392KDY | 0.0039 25 |
| C308 | ECFT1E392KDY | 0.0039 25 |
| C310 | ECFTD473JX | 0.047 25 |
| C311 | ECQP1471JZ | 470P 125 |
| C313 | RCBS1H102KBY | 0.001 50 |
| C314 | RCBS1H102KBY | 0.001 50 |
| C321 | ECEA1CU100 | 10 16 |
| C323 | ECFT1E332KDY | 0.0033 25 |
| C324 | ECFT1E332KDY | 0.0033 25 |
| C325 (EG) | RCBS1H330JLY | 33P 50 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| C326 | ECKD1H223PF | 0.022 50 |
| C327 (EG) | RCBS1H102KBY | 0.001 50 |
| C401 | ECKD1H103PF | 0.01 50 |
| C402 | ECKD1H103PF | 0.01 50 |
| C407 | ECCD1H101K | 100P 50 |
| C408 | ECCD1H101K | 100P 50 |
| C409 | ECKD1H103PF | 0.01 50 |
| C410 | ECKD1H103PF | 0.01 50 |
| C411 | ECEA1EU3R3 | 3.3 25 |
| C412 | ECEA1EU3R3 | 3.3 25 |
| C415 | ECKD1H103PF | 0.01 50 |
| C416 | ECKD1H103PF | 0.01 50 |
| C417 | ECKD1H103PF | 0.01 50 |
| C418 | ECEA1HUR47 | 0.47 50 |
| C419 | ECEA0JKS101 | 100 6.3 |
| C421 | ECEA1CU220 | 22 16 |
| C422 | ECEA1CU220 | 22 16 |
| C425 | ECCD1H101K | 100P 50 |
| C451 | ECEA1EU3R3 | 3.3 25 |
| C452 | ECEA1EU3R3 | 3.3 25 |
| C453 | ECCD1H101K | 100P 50 |
| C454 | ECCD1H101K | 100P 50 |
| C455 | RCBS1H102KB | 0.001 50 |
| C456 | RCBS1H102KB | 0.001 50 |
| C457 | ECFTD223JX | 0.022 25 |
| C458 | ECFTD223JX | 0.022 25 |
| C459 | ECFT1E682KDY | 0.0068 25 |
| C460 | ECFT1E682KDY | 0.0068 25 |
| C461 | ECEA1EU3R3 | 3.3 25 |
| C462 | ECEA1EU3R3 | 3.3 25 |
| C463 | ECEA0JU330 | 33 6.3 |
| C464 | ECEA0JU330 | 33 6.3 |
| C501 | ECKD1H331KB | 330P 50 |
| C502 | ECKD1H331KB | 330P 50 |
| C503 | ECFD1E333KD | 0.033 25 |
| C504 | ECFD1E333KD | 0.033 25 |
| C505 | ECEA1EU3R3 | 3.3 25 |
| C506 | ECEA1EU3R3 | 3.3 25 |
| C509 | ECEA1CU100 | 10 16 |
| C510 | ECEA1CU100 | 10 16 |
| C511 | ECCD1H120KC | 12P 50 |
| C512 | ECCD1H120KC | 12P 50 |
| C513 | ECEA1EU3R3 | 3.3 25 |
| C514 | ECEA1EU3R3 | 3.3 25 |
| C515 | ECKD1H103PF | 0.01 50 |
| C516 | ECEA1EU3R3 | 3.3 25 |
| C517 | ECKD1H103PF | 0.01 50 |
| C518 | ECKD1H103PF | 0.01 50 |
| C520 | ECEA1EU3R3 | 3.3 25 |
| C551 | ECFT1E563KDY | 0.056 25 |
| C552 | ECFT1E563KDY | 0.056 25 |
| C553 | ECEA1HU010 | 1 50 |
| C554 | ECEA1HU010 | 1 50 |
| C555 | ECFTD223JX | 0.022 25 |
| C556 | ECFTD223JX | 0.022 25 |
| C557 | ECEA1HUR22 | 0.22 50 |
| C558 | ECEA1HUR22 | 0.22 50 |
| C559 | ECFT1E472KDY | 0.0047 25 |
| C560 | ECFT1E472KDY | 0.0047 25 |
| C561 | ECFT1E683KDY | 0.068 25 |
| C562 | ECFT1E683KDY | 0.068 25 |
| C563 | ECFT1E102KDY | 0.001 25 |
| C564 | ECFT1E102KDY | 0.001 25 |
| C565 | ECFT1E183KDY | 0.018 25 |
| C566 | ECFT1E183KDY | 0.018 25 |
| C567 | ECKD1H561KB | 560P 50 |
| C568 | ECKD1H561KB | 560P 50 |
| C569 | ECFT1E392KDY | 0.0039 25 |
| C570 | ECFT1E392KDY | 0.0039 25 |
| C571 | ECCD1H820K | 82P 50 |
| C572 | ECCD1H820K | 82P 50 |
| C573 | ECKD1H471KB | 470P 50 |
| C574 | ECKD1H471KB | 470P 50 |
| C575 | ECEA1EU3R3 | 3.3 25 |
| C576 | ECEA1EU3R3 | 3.3 25 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| C577 | ECEA1ES100 | 10 25 |
| C578 | ECEA1ES100 | 10 25 |
| C579 | ECEA1ES100 | 10 25 |
| C580 | ECEA1ES100 | 10 25 |
| C589 | ECEA1EU3R3 | 3.3 25 |
| C590 | ECEA1EU3R3 | 3.3 25 |
| C597 | ECEA1CU100 | 10 16 |
| C598 | ECEA1CU100 | 10 16 |
| C601 | ECEA1EU3R3 | 3.3 25 |
| C602 | ECEA1EU3R3 | 3.3 25 |
| C603 | ECCD1H101K | 100P 50 |
| C604 | ECCD1H101K | 100P 50 |
| C605 | ECEA1CN330S | 33 16 |
| C606 | ECEA1CN330S | 33 16 |
| C607 | ECCD1H120KC | 12P 50 |
| C608 | ECCD1H120KC | 12P 50 |
| C609 | ECKD1H821KB | 820P 50 |
| C610 | ECKD1H821KB | 820P 50 |
| C611 | ECKD1H223PF | 0.022 50 |
| C612 | ECKD1H223PF | 0.022 50 |
| C614 | ECEA1HS330 | 33 50 |
| C615 | ECEA1HN100S | 10 50 |
| C671 (EG) | ECCD1H180KC | 18P 50 |
| C672 (EG) | ECCD1H180KC | 18P 50 |
| C673 (EG) | ECCC1H221K | 220P 50 |
| C674 | ECCC1H221K | 220P 50 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| (EG) | | |
| C675 (EG) | ECCD1H101K | 100P 50 |
| C676 (EG) | ECCD1H101K | 100P 50 |
| C677 (EG) | ECCD1H101K | 100P 50 |
| C678 (EG) | ECCD1H101K | 100P 50 |
| C679 (EG) | ECCD1H101K | 100P 50 |
| C680 (EG) | ECCD1H101K | 100P 50 |
| C685 (EG) | ECKD1H103PF | 0.01 50 |
| C686 (EG) | ECKD1H103PF | 0.01 50 |
| C687 (EG) | ECKD1H103PF | 0.01 50 |
| C688 (EG) | ECKD1H103PF | 0.01 50 |
| C693 (EG) | ECCC1H221K | 220P 50 |
| C694 (EG) | ECCC1H221K | 220P 50 |
| C695 (EG) | ECCD1H101K | 100P 50 |
| C696 (EG) | ECCD1H101K | 100P 50 |

| Ref. No. | Part No. | Value. |
|---|---|---|
| C697 (EG) | ECCD1H101K | 100P 50 |
| C698 (EG) | ECCD1H101K | 100P 50 |
| C701 | ECES1HU472 | 4700 50 |
| C702 | ECES1HU472 | 4700 50 |
| C703 | ECKD1H103PF | 0.01 50 |
| C704 | ECEA1VU101 | 100 35 |
| C705 | ECEA1CU101 | 100 16 |
| C706 | ECKD1H103PF | 0.01 50 |
| C707 | ECEA1HU4R7 | 4.7 50 |
| C708 | ECEA1CU101 | 100 16 |
| C709 | ECKD1H103PF | 0.01 50 |
| C710 | ECKD1H103PF | 0.01 50 |
| C711 | ECEA1CU101 | 100 16 |
| C712 | ECEA1VU470 | 47 35 |
| C713 | ECEA1CU220 | 22 16 |
| C771 ⚠ | ECKD2H103PE | 0.01 500 |
| C781 | ECEA1HS471 | 470 50 |
| C791 ⚠ | ECKDKC103PF2 | 0.01 125 |
| C901 | ECEA0JS102 | 1000 6.3 |
| C902 | ECEA0JS102 | 1000 6.3 |
| C910 | ECKD1H103PF | 0.01 50 |
| C911 | ECEA1HU3R3 | 3.3 50 |
| C912 | ECEA1HU3R3 | 3.3 50 |
| C913 | ECEA1HU3R3 | 3.3 50 |
| C914 | ECEA1VU100 | 10 35 |
| C916 | ECEA0JS102 | 1000 6.3 |
| C917 | ECEA0JU101 | 100 6.3 |
| C922 | ECKD1H331KB | 330P 50 |
| C999 | ECKD1H331KB | 330P 50 |



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